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INTRODUCTORY NOTES

Notes on Transliteration

Vowel-Sounds

a has the sound of *a* in 'woman.'
ā has the sound of *a* in 'father.'
e has the vowel-sound in 'grey.'
i has the sound of *i* in 'pin.'
ī has the sound of *i* in 'police.'
o has the sound of *o* in 'bone.'
u has the sound of *u* in 'bull.'
ū has the sound of *u* in 'flute.'
ai has the vowel-sound in 'mine.'
au has the vowel-sound in 'house.'

It should be stated that no attempt has been made to distinguish between the long and short sounds of *e* and *o* in the Dravidian languages, which possess the vowel-sounds in 'bet' and 'hot' in addition to those given above. Nor has it been thought necessary to mark vowels as long in cases where mistakes in pronunciation were not likely to be made.

Consonants

Most Indian languages have different forms for a number of consonants, such as *d*, *t*, *r*, &c., marked in scientific works by the use of dots or italics. As the European ear distinguishes these with difficulty in ordinary pronunciation, it has been considered undesirable to embarrass the reader with them; and only two notes are required. In the first place, the Arabic *k*, a strong guttural, has been represented by *k* instead of *q*, which is often used. Secondly, it should be remarked that aspirated consonants are common; and, in particular, *dh* and *th* (except in Burma) never have the sound of *th* in 'this' or 'thin,' but should be pronounced as in 'woodhouse' and 'boathook.'

Burmese Words

Burmese and some of the languages on the frontier of China have the following special sounds :—

aw has the vowel-sound in 'law.'

ö and ü are pronounced as in German.

gy is pronounced almost like *j* in 'jewel.'

ky is pronounced almost like *ch* in 'church.'

th is pronounced in some cases as in 'this,' in some cases as in 'thin.'

w after a consonant has the force of *uw*. Thus, *ywa* and *pwe* are disyllables, pronounced as if written *yuwa* and *puwe*.

It should also be noted that, whereas in Indian words the accent or stress is distributed almost equally on each syllable, in Burmese there is a tendency to throw special stress on the last syllable

General

The names of some places—e. g. Calcutta, Bombay, Lucknow, Cawnpore—have obtained a popular fixity of spelling, while special forms have been officially prescribed for others. Names of persons are often spelt and pronounced differently in different parts of India; but the variations have been made as few as possible by assimilating forms almost alike, especially where a particular spelling has been generally adopted in English books.

Notes on Money, Prices, Weights and Measures

As the currency of India is based upon the rupee, all statements with regard to money throughout the *Gazetteer* have necessarily been expressed in rupees, nor has it been found possible to add generally a conversion into sterling. Down to about 1873 the gold value of the rupee (containing 165 grains of pure silver) was approximately equal to 2*s*., or one-tenth of a £; and for that period it is easy to convert rupees into sterling by striking off the final cipher (Rs. 1,000 = £100). But after 1873, owing to the depreciation of silver as compared with gold throughout the world, there came a serious and progressive fall in the exchange, until at one time the gold value of the rupee dropped as low as 1*s*. In order to provide a remedy for the heavy loss caused to the Government of India in respect of its gold payments to be made in England, and also to relieve foreign trade and finance from the inconvenience due to constant and unforeseen fluctuations in exchange, it was resolved in 1893 to close the mints to the free coinage of silver, and thus force up the value of the rupee by restricting the circulation. The intention was to raise

the exchange value of the rupee to 1*s*. 4*d*., and then introduce a gold standard (though not necessarily a gold currency) at the rate of Rs. 15 = £1. This policy has been completely successful. From 1899 onwards the value of the rupee has been maintained, with insignificant fluctuations, at the proposed rate of 1*s*. 4*d*.; and consequently since that date three rupees have been equivalent to two rupees before 1873. For the intermediate period, between 1873 and 1899, it is manifestly impossible to adopt any fixed sterling value for a constantly changing rupee. But since 1899, if it is desired to convert rupees into sterling, not only must the final cipher be struck off (as before 1873), but also one-third must be subtracted from the result. Thus Rs. 1,000 = £100 $-\frac{1}{3}$ = (about) £67.

Another matter in connexion with the expression of money statements in terms of rupees requires to be explained. The method of numerical notation in India differs from that which prevails throughout Europe. Large numbers are not punctuated in hundreds of thousands and millions, but in lakhs and crores. A lakh is one hundred thousand (written out as 1,00,000), and a crore is one hundred lakhs or ten millions (written out as 1,00,00,000). Consequently, according to the exchange value of the rupee, a lakh of rupees (Rs. 1,00,000) may be read as the equivalent of £10,000 before 1873, and as the equivalent of (about) £6,667 after 1899; while a crore of rupees (Rs. 1,00,00,000) may similarly be read as the equivalent of £1,000,000 before 1873, and as the equivalent of (about) £666,667 after 1899.

Finally, it should be mentioned that the rupee is divided into 16 annas, a fraction commonly used for many purposes by both natives and Europeans. The anna was formerly reckoned as 1½*d*.; it may now be considered as exactly corresponding to 1*d*. The anna is again subdivided into 12 pies.

The various systems of weights used in India combine uniformity of scale with immense variations in the weight of units. The scale used generally throughout Northern India, and less commonly in Madras and Bombay, may be thus expressed: one maund = 40 seers; one seer = 16 chittaks or 80 tolas. The actual weight of a seer varies greatly from District to District, and even from village to village; but in the standard system the tola is 180 grains Troy (the exact weight of the rupee), and the seer thus weighs 2·057 lb., and the maund 82·28 lb. This standard is used in official reports and throughout the *Gazetteer*.

For calculating retail prices, the universal custom in India is to express them in terms of seers to the rupee. Thus, when prices change, what varies is not the amount of money to be paid for the

same quantity, but the quantity to be obtained for the same amount of money. In other words, prices in India are quantity prices, not money prices. When the figure of quantity goes up, this of course means that the price has gone down, which is at first sight perplexing to an English reader. It may, however, be mentioned that quantity prices are not altogether unknown in England, especially at small shops, where pennyworths of many groceries can be bought. Eggs, likewise, are commonly sold at a varying number for the shilling. If it be desired to convert quantity prices from Indian into English denominations without having recourse to money prices (which would often be misleading), the following scale may be adopted—based upon the assumptions that a seer is exactly 2 lb., and that the value of the rupee remains constant at 1*s.* 4*d.*: 1 seer per rupee = (about) 3 lb. for 2*s.*; 2 seers per rupee = (about) 6 lb. for 2*s.*; and so on.

The name of the unit for square measurement in India generally is the *bīgha*, which varies greatly in different parts of the country. But areas have always been expressed throughout the *Gazetteer* either in square miles or in acres.

MAPS

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Nāyakanhatti.—Town in the Challakere *tāluk* of Chitaldroog District, Mysore, situated in 14° 28′ N. and 76° 33′ E., 14 miles north-west of Challakere town. Population (1901), 2,858. The name was formerly Hatti. It was founded by a Naik, who came here with large droves of superior cattle from near Srīsailam in Kurnool District in search of pasture. He was recognized as a *poligār* by Vijayanagar, and exchanged some of his cattle for Molakālmuru. The territory was captured by the chiefs of Chitaldroog, and was held by them till subdued by Haidar Alī. At Nāyakanhatti is a tomb and temple dedicated to a Mahāpurusha or saint of the Lingāyats, to which sect most of the people belong. The municipality, formed in 1899, became a Union in 1904. The receipts and expenditure for two years ending 1901 averaged Rs. 1,500 and Rs. 500. In 1903–4 they were Rs. 1,100 and Rs. 3,300.

Nayānagar.—Town in Merwāra, Rājputāna. *See* BEĀWAR.

Nazareth.—Village in the Srīvaikuntam *tāluk* of Tinnevelly District, Madras, situated in 8° 34′ N. and 77° 59′ E., 22 miles from Pālamcottah. Population (1901), 4,351, of whom 2,690 were Christians. As its name shows, Nazareth is a missionary village; and it contains a high school for girls, an art industrial school (one of the most prominent in the Madras Presidency), an orphan asylum, and a mission hospital. It is the head-quarters of a Christian mission, which numbers 12,000 adherents and includes 2,000 school-children. Good hand-made lace is manufactured at the art school.

Nāzirā (or Gargaon).—Village in Sibsāgar District, Eastern Bengal and Assam, situated in 26° 56′ N. and 94° 45′ E., on the left bank of the Dikho river, about 9 miles south-east of Sibsāgar town. It was the capital of the Ahom Rājās from the middle of the sixteenth to the end of the seventeenth century, but was twice captured, once by the Koch king Nar Nārāyan and once by Mīr Jumla, Nawāb of Dacca. The Muhammadan historian states that the town had four gates, each about 3 *kos* distant from the Rājā's palace. The palace itself was a magnificent structure, the building of which had afforded occupation to 12,000

workmen for a year, and the ornaments and curiosities with which the whole woodwork was filled defied all description. Robinson, writing in 1844, describes the ruins as follows:—

'The royal palace was surrounded by a brick wall about 2 miles in circumference; but the whole town and its suburbs appear to have extended over many square miles of country. The ruins of gateways, built chiefly of masonry, are still to be seen within the fortified circumvallations which surrounded the town. One of the gateways is composed principally of large blocks of stone, bearing marks of iron crampings, which evidently show that they once belonged to far more ancient edifices.'

Nāzirā is now the head-quarters of the Assam Tea Company, and a considerable bazar has sprung up on the banks of the river, to which Nāgās bring down chillies, betel-leaf, rubber, and bamboo mats. Salt, grain, piece-goods, and oil are imported in large quantities to meet the demands of the cooly population. The place is connected by rail with Gauhāti and Dibrugarh, and contains a high school with an average attendance in 1903–4 of 164 boys.

Neddiavattam.—Village in Nīlgiri District, Madras. *See* NADUVATTAM.

Neemuch.—Town and British cantonment in Central India. *See* NĪMACH.

Negapatam Subdivision.—Subdivision of Tanjore District, Madras, consisting of the NEGAPATAM and NANNILAM *tāluks*.

Negapatam Tāluk.—Coast *tāluk* of Tanjore District, Madras, lying between 10° 32′ and 10° 50′ N. and 79° 34′ and 79° 51′ E., with an area of 240 square miles. The population fell from 220,165 in 1891 to 217,607 in 1901; but the *tāluk* still stands second in the District and fifth in the Presidency in regard to density, which is 907 persons per square mile. The *tāluk* contains proportionately more educated people than any other in the District; and it owes this characteristic and its general importance to NEGAPATAM TOWN (population, 57,190), the head-quarters, which is a large municipality and seaport. The only other considerable town is TIRUVALŪR (15,436), noted for its temple and the idol car belonging thereto. The number of villages is 189. The demand for land revenue and cesses in 1903–4 amounted to Rs. 5,75,000. Although it lies within the Cauvery delta, the south-easternmost portions are beyond the irrigation system which depends upon that river. It contains no alluvial soil and the land is not of a very high class.

Negapatam Town (Ptolemy's *Nigamos* and Rashīd-ud-dīn's *Malifattan*).—Head-quarters of the *tāluk* of the same name and seaport in Tanjore District, Madras, situated in 10° 46′ N. and 79° 51′ E., 212 miles from Madras by the South Indian Railway and its branch, the District board line. The population in 1871 was 48,525; in 1881,

53,855; in 1891, 59,221; and in 1901, 57,190. It now ranks as the ninth largest town in the Presidency. In 1901 Hindus formed nearly 68 per cent. of the population, Musalmāns 22 per cent., and Christians 10 per cent. Nagore, within municipal limits to the north, is a stronghold of the Marakkāyan traders, a mixed class of Muhammadans.

Negapatam was in very ancient times the capital city of the little-known Nāga people, from whom its name (*Nāgapattanam*) is apparently derived. Later it became one of the earliest settlements of the Portuguese on the east coast, and was called by them the city of Choramandel. It was also one of the earliest centres of the Portuguese Christian missions. It was captured by the Dutch in 1660, and was the chief of their Indian possessions till 1781. Meanwhile Nagore had been sold to the Dutch by the Rājā of Tanjore in 1773, but was soon afterwards wrested from them by the Nawāb of the Carnatic with the aid of the English. It was afterwards restored to the Rājā, who made a grant of it to the Company in 1776. During the war of 1780–1 Haidar Alī of Mysore ceded the place to the Dutch, with the result that an expedition from Madras under Sir Hector Munro captured both Nagore and Negapatam in November, 1781. When in 1799 the Tanjore kingdom came into British hands by treaty, Negapatam was made the District head-quarters and remained so until 1845. A divisional officer, an Executive Engineer, a Sub-Judge, an Assistant Commissioner of Separate Revenue, an Assistant Superintendent of police, and a Port officer are still stationed here. There are also a branch of the Bank of Madras and an agent for emigration to the Straits Settlements. The South Indian Railway has extensive workshops in the town, and two companies of their volunteer corps have their head-quarters here. The place contains three high schools for boys, two of them being maintained by missionary bodies. Nagore possesses two Arabic schools, and there is a third at Negapatam. Of the many temples only one is ancient. It is dedicated to Kāyārohanaswāmi, and is called Kāronam and occasionally Cholakulavallipattinam in the inscriptions of Rājārājā and other Chola kings. A stone tablet at a small temple records in Dutch that this pagoda was built in A.D. 1777 under the auspices of the Governor Reynier van Vlissingen. The Nagore *dargāh*, whose white minarets (one of them 90 feet high) are one of the best-known landmarks along the coast, was built over the tomb of the saint Mīrān Sāhib Makhan. The inscriptions on the tomb relate that it was built in eleven days by Pratāp Singh of Tanjore in Hijra 1171 (A.D. 1757). The Kandiri festival, one of the greatest Muhammadan festivals in Southern India, is celebrated here on the anniversary of the saint's death.

Negapatam and Nagore were incorporated as a single municipality in 1866. The receipts and expenditure during the ten years ending

1902–3 averaged Rs. 77,000 and Rs. 78,000 respectively. In 1903–4 the income was Rs. 76,000, the principal receipts being the house and land taxes (Rs. 27,000), the profession tax (Rs. 9,500), tolls (Rs. 8,000), and scavenging and other fees (Rs. 8,000). The total expenditure of Rs. 75,000 included conservancy (Rs. 29,000), hospitals and dispensaries (Rs. 7,000), and roads and buildings (Rs. 10,500). The municipal hospital, originally built by private subscription, contains 46 beds. Schemes for drainage and water-supply have been framed at an estimated cost of Rs. 4,13,000 and Rs. 2,32,000 respectively. The latter project has had to be dropped for want of funds.

Until 1845 Negapatam was the chief port south of Madras; thereafter its trade declined for some time owing to the superior advantages of Tranquebar, which in that year had become a British possession by purchase from Denmark. But the opening of the South Indian Railway to Negapatam in 1861 restored its trade. A lighthouse 80 feet high, which has recently been fitted with a revolving light, was erected in 1869. In 1876, however, the railway brought Tuticorin into touch with Madras city, and since then Negapatam has again declined in importance. The opening of the line to Kārikāl and up the north-eastern coast has still further contributed towards this result. The trade of Negapatam is now chiefly with Ceylon, Burma, and the Straits Settlements, and also to a very small extent with the United Kingdom and Spain. Excluding coasting trade, the total imports in 1903–4 were valued at 12·3 lakhs, and the total exports at 65·7 lakhs. The chief imports were areca-nuts (8·3 lakhs), gunny-bags, camphor, cotton piece-goods, and apparel. Among lesser imports may be mentioned skins, tobacco, miscellaneous provisions, sugar, wrought metals, gums and resins, wood and furniture. The principal exports were rice (22·3 lakhs), cotton piece-goods (6·8), live-stock, *ghī*, tobacco, cigars, turmeric, and skins. The minor exports were fruits and vegetables, chillies, sugar, and oil-cake. In 1903–4 the coasting trade consisted of imports to the value of 23·6 lakhs and exports to the value of 9·1 lakhs. Negapatam is an important centre of emigration to the Straits Settlements and Natal.

Nekmard.—A long-established fair till recently held annually for a week in the middle of April in the village of Bhawānandpur in the Thākurgaon subdivision of Dinājpur District, Eastern Bengal and Assam (25° 59′ N. and 88° 16′ E.), near the tomb of a Muhammadan saint from which it takes its name. It is one of the largest cattle fairs in the Province, being attended by about 150,000 people from all parts of the country. Bullocks, principally from Bihār, are bought up by agents from Mymensingh and adjacent Districts; ponies from the Bhutān hills, country-bred horses from Bihār, elephants and camels are also sold in large numbers; and traders frequent the fair with

miscellaneous articles of every description from the farthest corners of India. In recent years Government has prohibited the holding of this fair as a precaution against plague.

Nelamangala.—Northern *tāluk* of Bangalore District, Mysore, lying between 12° 58′ and 13° 20′ N. and 77° 11′ and 77° 32′ E., with an area of 272 square miles. The population in 1901 was 71,952, compared with 63,119 in 1891. The *tāluk* contains two towns, Tyāmagondal (population, 4,099) and Nelamangala (4,025), the head-quarters; and 337 villages. The land revenue demand in 1903–4 was Rs. 1,37,000. The Arkāvati runs through the east, and the west has a chain of hills, of which Sivaganga (4,559 feet) is the highest point. The west is broken and jungly, while the other parts are open and contain some large valleys with fine tanks. The soil is chiefly a red mould, shallow and gravelly. Iron ore is found in some parts.

Nelliampathis.—Range of hills in Cochin State, Madras, forming a section of the Western Ghāts. They lie 20 miles to the south of Pālghāt, which is the nearest railway station, between 10° 26′ and 10° 42′ N. and 76° 31′ and 76° 52′ E.

The range varies in height from 1,500 to 5,000 feet above the sea, and consists of a succession of ridges cut off from one another by valleys containing dark evergreen forests. In the centre of the range is an extensive plateau, the average elevation of which is over 3,000 feet. The highest peak in the range is Nellikkotta or Padagiri, 5,200 feet above sea-level. Karimalagopuram, Vellāchimudi, Valiyavana Ridge, Myānmudi, and Vālavachān are other peaks, each over 4,000 feet in height. The climate of the range is cool and pleasant during the greater part of the year, but is malarious in March, April, and May. The monsoon rains are heavy, the average annual fall being 155 inches. In 1903 the thermometer ranged from 60° in December to 84° in April, the mean temperature being 72°.

Throughout the Nelliampathis and the adjoining country of Parambikolam, the hills are densely covered with teak and other trees which grow in this generous soil to very large dimensions. Until recently, these forests had never been worked for want of a suitable outlet to the plains. A tramway and timber slide have now, however, been constructed, which will render accessible the valuable produce of this range. On the plateau above referred to, land was opened out for coffee-growing in 1864. There are now eighteen estates, of which seventeen are owned by Europeans. The total area assigned for coffee cultivation is 8,502 acres, of which 3,177 acres are under mature plants. The yield in 1903–4 was 2,885 cwt., or an average of 91 lb. per acre of mature plants. From 800 to 1,000 labourers are employed on the plantations, and the annual quit-rent amounts to Rs. 13,000. The State has constructed a *ghāt* road to the estates, the length of

which from the foot of the *ghāt* to the plateau is 23 miles and the steepest gradient 1 in 6. About 15 miles of road on the plateau connect the estates with one another. The State maintains a dispensary and a police station. The population of the range is 3,018, of whom 310 are Kādans, the only jungle folk found in these hills.

Nellikuppam.—Town in the Cuddalore *tāluk* of South Arcot District, Madras, situated in 11° 46′ N. and 79° 41′ E., on the South Indian Railway. The population in 1901 was 13,137. It is a Union under the Local Boards Act (V of 1884). Next to Porto Novo, it contains more Musalmāns than any other town in the District. A large distillery and sugar factory close to the railway station afford employment to about 1,000 hands. In and about the town considerable areas are cultivated with sugar-cane to supply the factory; and the betel-vine is largely grown, the leaves being exported to Madras and other places.

Nellore District (*Nellūru*, perhaps meaning 'rice-town').—District on the east coast of the Madras Presidency, north of Madras City, lying between 13° 29′ and 16° 1′ N. and 79° 5′ and 80° 16′ E. After Vizagapatam it is the largest in the Presidency, its area being 8,761 square miles[1]. It forms part of the plains of the Carnatic, and is bounded on the east by the Bay of Bengal; on the south by the Districts of Chingleput and North Arcot; on the west by the Eastern Ghāts; and on the north by the District of Guntūr. The country rises very gradually till it reaches the foot of the Ghāts on the west. The outer range of these, known locally as the Velikondas ('outside hills'), separates Nellore from Cuddapah and Kurnool along nearly the whole of its western side. In the north-west, however, the range breaks up and recedes much more to the west, and in this region it lacks the bold and rugged aspect which distinguishes it in the south. It is the only range of hills in the District of any importance. The soil of Nellore is not naturally fertile, and large portions of it are either rocky wastes or covered with scrub jungle. A narrow belt of alluvial and backwater deposits, varying in width from 2 to 14 miles, runs close to, and parallel with, the sea. The best known of the backwaters is the PULICAT LAKE, which lies partly within this District and almost cuts off the SRĪHARIKOTA Island from the mainland. The scenery of Nellore is uninteresting, its distinguishing feature being wide extents of scrub jungle. Fine groves are occasionally found in the neighbourhood of villages and tanks, and in places stretches of bright green rice contrasting with dark clumps of trees form pretty pictures. Inland the

Physical aspects.

[1] While this work was passing through the press, the Ongole *tāluk* of this District was transferred to the newly-formed Collectorate of GUNTŪR. The present article, as a rule, deals with the District as it stood before this alteration.

country is particularly monotonous and dreary, though the line of the Ghāts is bold and precipitous.

The principal rivers which drain the District traverse it from west to east and fall into the Bay of Bengal. They are seven in number, and are of the usual South Indian type, dry during the greater portion of the year but carrying heavy floods during the rainy season. None of them is practicable for navigation except the Kandleru, up which boats drawing 2 or 3 feet can proceed for about 25 miles. The southernmost is the Swarnamukhi, which rises in the Chittoor hills, flows for about 30 miles in a north-easterly direction through the District, and falls into the Bay of Bengal 9 miles north of Armagon. North of this is the Kandleru, which bears various names in different parts of its course. Rising in the Velikondas, it flows past Gūdūr and empties itself into the sea near Kistnapatam. Its water is salt from Gūdūr downwards. Farther north is the PENNER, the most important of all, on which the town of Nellore, the head-quarters of the District, is situated. It rises in the Nandidroog hills in Mysore, and after a course of 285 miles in Anantapur and Cuddapah enters this District through a fine gorge in the Velikondas at Somasila. It flows in a broad and sandy bed for 70 miles in a generally eastern direction through the *tāluks* of Atmakūr and Nellore, and debouches into the sea through several openings 18 miles below Nellore town. The river is useless for navigation, but a very large area is now irrigated from its water. Two anicuts (dams) have been built across it, at Nellore and at Sangam, which supply numerous irrigation channels. The Madras Irrigation Company began a third at Someswaram, but the project was eventually abandoned. Farther north, in the Kandukūr and Ongole *tāluks*, flow the Manneru, the Paleru, and the Mūsi rivers. These all rise in the Velikondas, and fall into the sea after receiving numerous streamlets on their way. The last river of any importance is the GUNDLAKAMMA, which issues from the great Cumbum tank in Kurnool District. After being joined by numerous rivulets it flows past Addanki.

The backwaters along the coast have already been mentioned. The Kistnapatam backwater contains over 30 feet of water in the hot season at low tide, but a bar with only 5 or 6 feet blocks the entrance. Several small ports had a considerable coasting trade in former times, but the BUCKINGHAM CANAL and the East Coast Railway have now practically destroyed the whole of it. Of these places the most important, beginning from the north, were Kottapatam, Itamukkula, Rāmayapatnam, Iskapalli, Kistnapatam, and Dugarāzupatnam or Armagon. At none of them is access possible to boats of heavy tonnage. Six miles south of Dugarāzupatnam lie the Armagon shoal and lighthouse.

The central area of Nellore is composed of Archaean, well foliated,

mixed mica and hornblende schists. To the east of a line drawn from north to south through the middle of these gneisses or schists occur, generally parallel to the foliation, intrusive sheets and lenses of very micaceous pegmatites. Within the last ten years these have given rise to a considerable mica industry. More than 2,000 acres were taken up on leases in 1898. The pegmatites are coarsely intergrown mixtures of felspar, quartz, and muscovite, with tourmaline, garnet, beryl, and columbite as accessory minerals. The largest mica crystals in India, measuring 15 feet at right angles to the folia and 10 feet across, were extracted from Mr. Sargent's mine at Inukurti. The mica is generally coloured grass-green, yellowish green, or a smoky tint. The possibilities of the field are not yet thoroughly known, and there may be a great future for the industry, though at present it is less flourishing than it was a few years ago.

On the west and south-west of this central area come gneissoid granite and augite and olivine-bearing diabase dikes; and beyond them again, in the same direction, we find the somewhat irregular and shattered edge of the great overlying Cuddapah series of the Purāna group of ancient sedimentary unfossiliferous rocks, which stretches away to the west out of the District. In the other direction, where the gneissic area passes insensibly under the alluvium, are occasional traces of the Rājmahāl plant-bearing sandstones and shales of Jurassic age, lying gently inclined on the gneiss, and a long, almost continuous, narrow belt of Cuddalore sub-recent sandstones, followed by the coastal alluvium, low-level laterite, and areas of blown sand.

Large trees are not common in the District, being usually found only near villages. Among them may be mentioned the *margosa* (*Melia Azadirachta*), which grows even on laterite soil, the various species of *Ficus* (*indica*, *Tsiela*, and *religiosa*), the tamarind, the acacias (*arabica* and *speciosa*), and the mango. The palmyra and the coco-nut palm both grow, the former abundantly, the latter unwillingly, in the coast *tāluks*, and the bastard date (*Phoenix sylvestris*) is also found. A large part of the District is covered with low scrub jungle, in which the red-sanders tree (*Pterocarpus santalinus*), the satin-wood (*Chloroxylon Swietenia*), and a few other useful species occur. At the foot of the Velikondas in the Rāpūr *tāluk* some fairly large timber trees are found. The casuarina was introduced into the District about forty years ago, and is now largely grown for firewood on the sandy land near the shore.

Nellore has but few attractions for the sportsman seeking big game. Tigers occasionally wander across the border from the Cuddapah hills. Bears exist on the Ghāts and in the Kanigiri and Podili hills, but are not plentiful. Leopards, hunting leopards, *sāmbar*, and spotted deer are to be met with; and antelope, gazelle, and wild hog are fairly common. A quarter of a century ago a few bison were to be found.

Snipe, florican, and other feathered game are tolerably plentiful; and the Indian bustard is occasionally seen.

The climate is dry and fairly healthy, being subject to no sudden changes of temperature. But the heat is excessive for two or three months of the year, when a scorching westerly wind blows. The sea-breeze makes the tract of country near the coast generally cooler than the inland *tāluks*. The average temperature at Nellore town varies from 77° in January to 94° in May, the thermometer rising on some days to over 112° in the shade. The annual mean for the town is 85°, compared with 83° in Madras city. The District is generally regarded as one of the hottest in the Presidency.

Nellore is visited by both the north-east and south-west monsoons. The rainfall is lightest in the inland *tāluks* of Kanigiri and Udayagiri. Next come the coast *tāluks* to the north of the Penner. Farther south, at Nellore and in Rāpūr and Gūdūr, the fall is above the District average. The supply is heavier, generally speaking, along the coast than in the interior, the average at Tada on Pulicat Lake being as much as 41 inches. The annual fall, based on the statistics from 1870 to 1899, averages 36 inches in the south, 32 in the north-east, and 26 in the north-west. The rainfall is, however, capricious and uncertain. It was only 11 inches in the famine year of 1876, while in 1903-4 it amounted to nearly 56 inches, being in many places more than double the average.

Nellore has been fortunate in escaping serious natural calamities other than famine. But destructive storms were recorded in 1820 and 1857; and the heavy floods in the Penner and other rivers in 1852, 1874, 1882, and 1893 caused widespread damage. In the flood of 1882 the Penner rose to the extraordinary height of 28½ feet above its deep bed near the Nellore anicut, while the whole country between Gūdūr and Manubolu was inundated by the overflow of the Kandleru and Venkatagiri rivers. In 1902 and 1903 there were again heavy floods, which caused a great deal of damage to the railway line, roads, and tanks.

History.

Nothing certain is known of the history of Nellore before the times of the CHOLAS. Tamil inscriptions indicate that it formed part of their kingdom till their decline in the thirteenth century A.D. About the middle of that century it seems to have passed to the PĀNDYAS of Madura, who had reasserted their independence, and later to the Telugu Choda chiefs, who ruled it as feudatories of the Kākatīyas of Warangal, now in the Nizām's Dominions. In the next century it became part of the rising Hindu kingdom of Vijayanagar, the capital of which was in the modern Bellary District. Krishna Rāya, the greatest of that dynasty, captured the hill fort of Udayagiri in A.D. 1512, and appointed a governor over it, to

whom the rest of the District became subordinate, and who continued to hold it even after the disruption of the Vijayanagar empire by the Muhammadans at the battle of Tālikotā in 1565.

English connexion with Nellore dates from 1625, when, after the massacre of Amboyna, the East India Company's servants, headed by Day, the future founder of Fort St. George, formed a trading establishment at Dugarāzupatnam and called it Armagon or Armeghon, after one Arumuga Mudaliyār, the chief man of the neighbourhood, who was of much assistance to them. Armagon, however, was given up in 1639 in favour of the new settlement at Fort St. George, Madras. In 1753 Nellore was under the rule of Najīb-ullah, the brother of the Nawāb of Arcot. In 1757 he rebelled against the Nawāb's authority, and a large force was sent against him. He successfully defended himself with a body of 3,000 men and some aid received from the French at Masulipatam. Shortly after this Colonel Forde, who commanded the English force which was assisting the Nawāb, was recalled to Madras. Najīb-ullah then began to make incursions into the territories of the Nawāb, ending with an attack on the famous Tirupati temple. He was beaten back by an English detachment from Madras, but in 1758 he joined the French under Moracin and succeeded in taking the place. Early in 1759, however, on hearing that the siege of Fort St. George by the French, under Lally, had been raised, he declared for the English and put to death all the French with him, excepting their officer, St. Denys. He was reappointed governor of the District, his annual tribute being fixed at 30,000 pagodas. In the middle of the next year, Basālat Jang, the brother of Salābat Jang, the Sūbahdār of the Deccan, threatened the District; but on the appearance of a strong English relieving force under Captain More, he beat a hasty retreat north-west to Cuddapah. On the fall of Pondicherry in 1761, the Nawāb sought English aid for the reduction of Nellore, the governor of which he had not, despite his recent submission, forgiven. An army under Colonel Caillaud moved against Najīb-ullah early in 1762, took the Nellore fort in February, and soon afterwards made over the District to the Nawāb. During the wars with Haidar (1768–82) Nellore largely escaped the general devastation. On the assignment of the revenues of the Carnatic by the Nawāb to the Company in 1781, Nellore passed for the first time under direct British management. In 1801 it was, with the rest of the Carnatic, ceded in full sovereignty to the Company by the Nawāb Azīm-ud-daula.

There are very few archaeological remains of interest in Nellore. The most interesting are the ruins of the hill fort at UDAYAGIRI. The architecture of the temples and mosques is usually of the most insignificant character. Not a single fine building is found in the District, though a few large *gopurams* (towers) adorn some of the temples. The large

monolithic *stambha* (pillar) at Sangam is worth noting, and there is a similar one at Chundi.

The early history of the District is now being worked out from inscriptions, but the details are not yet fully ascertained. Most of the inscriptions are of the period of the Vijayanagar dynasty, but others, going as far back as the Chālukyas, have been discovered. The earliest catalogued by Sewell in his *List of Antiquities* is from a temple in Jummalūru in the Darsi *tahsīl*, and is dated A.D. 1096. Roman coins belonging to the age of Hadrian and Trajan were found in 1786 in a small pot buried under a Hindu shrine. Gold coins of the former emperor were also discovered in 1903 at Tangutūr. When the anicut across the Penner was being constructed, a large amount of laterite had to be quarried in the neighbourhood, and in this deposit were found several coffins, made apparently of burnt clay, embedded in quartz. The bodies within were in a good state of preservation. Spear-heads and other implements were discovered with them.

Population.

The population of the District in 1871 numbered 1,376,811; in 1881, 1,220,236; in 1891, 1,463,736; and in 1901, 1,496,987. The effect of the famine of 1876–8 is noticeable; and the two scarcities which occurred in the decade ending 1901 reduced the rate of increase in that period to a low figure, and caused an actual decline, through emigration, in the *tāluks* along the northern and western borders. An idea of the amount of emigration which took place is given by the fact that in 1901 Kistna contained 62,000 persons who had been born in Nellore.

There are 1,758 villages in the District and 10 towns. Of the latter, the chief are the two municipalities of NELLORE (population, 32,040), the head-quarters, and ONGOLE (12,864). The District is made up of thirteen *tāluks* and *tahsīls*, statistics of which, according to the Census of 1901, are shown in the table on the next page. The head-quarters of these (except of Polūr, which are at Sūlūrpet) are at the villages and towns from which they are respectively named.

Of the population, 1,356,246, or 90 per cent., are Hindus; 82,886, or 6 per cent., are Musalmāns, who are most numerous in the Nellore *tāluk*; and 53,948, or 4 per cent., are Christians, chiefly to be found in Ongole. Nellore is one of seven Districts in the Presidency in which there are fewer females than males. Telugu is the language of 93 per cent. of the total population and is the prevailing vernacular in every *tāluk*.

The Telugu castes are in an overwhelming majority in the District. The most numerous of them are the Kāpu and Kamma cultivators, who number respectively 208,000 and 152,000; the Māla field-labourers, 184,000; and the Gollas, 119,000, who are the shepherds of the Telugu country. Perhaps the most interesting community from

an ethnological point of view are the Yānādis, a forest tribe, of whom 66,000, or two-thirds of the total for the Presidency, are found in Nellore. They are a primitive people, living mainly in the south of the District and especially in the jungles of Srīharikota, where they subsist largely by collecting and selling forest produce. They may be described as being still in the hunting-stage of development, and one section of them even now produces fire by friction. In the early years of the last century Government took them under its special protection, and still accords them exceptional treatment in several ways. An interesting account of them, by T. Ranga Rao, will be found in *Madras Museum Bulletin*, No. 2, vol. iv (Madras, 1901).

Tāluk or *Tahsīl*.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Kandukūr	787	1	161	151,417	192	+ 2·0	6,468
Darsi	616	...	118	82,459	134	− 2·6	2,870
Podili	564	...	111	58,937	104	− 13·9	2,327
Kanigiri	1,014	1	188	110,813	109	− 15·6	5,052
Atmakūr	640	...	112	110,906	173	+ 9·6	4,224
Udayagiri	871	...	134	95,173	109	− 5·0	3,324
Nellore	638	2	149	226,383	355	+ 14·4	15,705
Kāvali	548	1	77	87,015	159	+ 4·7	3,614
Gūdūr	910	1	144	144,209	158	+ 6·0	5,918
Rāpūr	596	...	112	70,130	118	+ 14·4	1,977
Venkatagiri	426	1	151	60,861	143	+ 7·9	2,817
Polūr	355	...	139	74,512	210	+ 7·1	3,420
Ongole	796	3	162	224,172	282	− 0·5	13,351
District total*	8,761	10	1,758	1,496,987	171	+ 2·3	71,067

* The area of the new Nellore District is 7,965 square miles, and the population 1,272,815.

Nellore contains fewer people who subsist entirely by agriculture than any Madras District except Malabar and the Nīlgiris. The other chief occupations are leather-work and weaving, while petty traders, cattle-breeders, bangle-makers (a clay found in Venkatagiri is particularly suitable for bangles), and beggars are more numerous than elsewhere.

Four Christian missions are established in the District. The first to appear on the field, some time in the beginning of the eighteenth century, was the old Jesuit Mission of the Carnatic. This has passed through several crises and shows but little vitality at present, the Roman Catholics in the District numbering only 1,567. The American Baptist Mission dates from 1840, when the Rev. S. S. Day visited Nellore. The mission has prospered; it has 11 stations in the northern portion of the District and its followers number 49,400. It maintains a second-grade college at Ongole, several industrial schools, and numerous primary schools for boys and girls. The Free Church of Scotland

Mission has been managing a school for boys at Nellore town since 1848. The Hermannsburg Lutheran Mission commenced operations in 1865. It now possesses eight stations and its adherents number 2,000. The total number of Christians in the District is 53,948, of whom all but 500 are natives.

Agriculture.

The coast *tāluks* differ much, both in their scenery and in the nature of their soils, from those in the west of the District. Speaking generally, the soils are poor and gravelly on the western side; but near the sea, where the laterite formation is not found, lie tracts composed of loam and clay of fair quality. From the Pulicat Lake alluvial soil stretches away from Tada nearly to the foot of the Velikonda hills. This range belongs to the well-known Cuddapah formation of quartzite and slate-beds, and along its foot is a narrow strip of land formed from the débris of these rocks and covered with low jungle. The flat plain between it and the sea is underlain for a great width by gneiss and granite with trap, but towards the east the crystalline rocks below consist of schists. A narrow belt of laterite traverses the District from north to south not far from the sea. The coast-line is marked by a drifting mass of loose sand in ridges or dunes, forming two or three parallel lines. Within this, a strip of alluvial soil formed by the deposits of rivers is found till the laterite is reached. Alluvium is also met with in the river valleys, especially in that of the Penner. All along the banks of the latter river, as far as the Someswaram gap, successive accumulations have covered the surface of the country for a distance varying from 5 to 10 miles. This alluvial soil is a mixture of sand and vegetable matter, and, though of poor quality, is well adapted for growing rice. The most fertile portions of the District are the Penner basin in Atmakūr and Nellore, the tract irrigated by the Penner canal system in the adjoining *tāluks* of Kāvali and Gūdūr, and the heavy black cotton-soil land in Ongole, which produces excellent 'dry crops' and extends into the Kandukūr *tāluk*. The laterite belt gives rise to a poor soil, often covered with scrub jungle, which is found in all the coast *tāluks*. The country bordering on the hills on the west is of a more stony and broken character. The worst *tāluks* in the District are Udayagiri and Kanigiri, where water is met with only at a great depth and the soil is of very inferior character. The District receives rain from both the south-west and north-east monsoons, and there are thus two harvests in the year. With the south-west monsoon rains, the early (*punāsa*) and the chief (*pedda*) crops are grown; with the north-east monsoon, the late (*paira*) crops. The *punāsa* crops are generally sown from June to September and reaped between December and March, and the *paira* crops are sown from October to January and reaped between February and April. The *punāsa* crops comprise the greater variety, but the *paira* crops cover the larger area.

The total area of the District is 8,761 square miles, of which *zamīndāri* and *inām* lands occupy 4,604 square miles. The *zamīndāris* have not been surveyed, and the area for which particulars are on record is only 4,970 square miles. Statistical particulars of this area for 1903–4 are given in the following table, in square miles:—

Tāluk.	Area shown in accounts.	Cultivated.	Irrigated.	Cultivable waste.	Forests.
Kandukūr . .	546	358	34	33	50
Kanigiri . .	439	167	17	78	75
Atmakūr . .	598	295	53	95	103
Udayagiri . .	433	139	18	71	149
Nellore . . .	597	338	211	31	37
Kāvali . . .	411	214	54	60	55
Gūdūr . . .	744	328	114	48	85
Rāpūr . . .	573	245	24	23	185
Ongole . . .	629	482	10	8	8
Total	4,970	2,566	535	447	747

Generally speaking, 'wet crops' are most cultivated in the south and east, and 'dry crops' in the west and north of the District. The staple food-crops are rice and *cholam* (*Sorghum vulgare*), which occupy 497 and 567 square miles respectively, or 28 and 32 per cent. of the net area cropped. Next in importance are *cambu* (*Pennisetum typhoideum*), *rāgi* (*Eleusine coracana*), and the various pulses. Rice is grown extensively in Gūdūr and Nellore, and in portions of Kāvali and Atmakūr. *Cholam* is cultivated throughout the District, the largest area being in Atmakūr, Rāpūr, and Kandukūr. *Variga* (*Panicum pilosum*) is confined to Ongole and Kandukūr, while the greater part of the horse-gram is found in Udayagiri and Kanigiri. Tobacco is raised in small patches here and there throughout the District. Cotton is found chiefly in the four northern *tāluks*. Indigo is grown principally in Ongole and Kandukūr, while castor is an important crop everywhere, except in Gūdūr and Nellore. Sugar-cane is hardly cultivated at all, but jaggery (coarse sugar) is manufactured from the juice of palmyra and bastard date-palms in Rāpūr and Kāvali.

Considerable areas of unoccupied arable land are found in all the *tāluks* except Ongole and Kandukūr, the extent being largest in Gūdūr and Rāpūr. The area of holdings increased by 7 per cent. during the fifteen years after the famine of 1876–8, and since 1891 the increase has been noticeable though slow. No improvements in agricultural practice have taken place during recent years. The ryots do not take much advantage of the provisions of the Land Improvement and Agriculturists' Loans Acts. During the seventeen years ending 1905 only Rs. 1,40,000 has been advanced under the former Act. The money is generally spent in sinking new wells and repairing old ones.

The Nellore breed of heavy cattle is celebrated throughout the Presidency. The chief centres for raising them are in Ongole and Kandukūr, and the country northwards as far as the Vinukonda and Bāpatla *tāluks* of Kistna District and westward into Kurnool. From this tract the large supplies of draught cattle required for the black cotton soil of the Ceded Districts and Kurnool are drawn. The stock in the southern *tāluks* are of a lighter and inferior breed; but in many of the villages of Nellore, Gūdūr, and Kāvali the ryots maintain large herds, partly for stock purposes and partly for manuring their fields. Sheep and goats are more numerous in the western tracts than along the coast. They belong to the long-legged kind ordinarily met with in Southern India, and are usually reared for their manure and for their skins, as they give very poor meat.

Of the total area of *ryotwāri* and 'minor *inām*' land under cultivation, 535 square miles, or about 11 per cent., are irrigated in about equal proportions from canals and tanks, wells taking a proportionately small share in the supply. The only considerable area protected from drought is that irrigated by the Penner canal system, which is supplied from the anicuts across that river at Nellore and Sangam. None of the other rivers of the District is of much use for irrigation. A small area of 800 acres in the north of the Ongole *tāluk* is supplied by the Kistna canals. The Nellore anicut feeds three channels which irrigate land on the southern bank of the river, and the Sangam dam supplies the great Kanigiri reservoir from which much land on the north bank is watered. A project to construct a reservoir on the Manneru to irrigate 17,500 acres of 'dry' land has been recently put in hand as a protective work. The District will also benefit from the Tungabhadra Project, if that is sanctioned.

There are in all 626 tanks and 302 channels in the District, which are partly under the Public Works, and partly under the Revenue department. Of the nine Government *tāluks*, Gūdūr, Kāvali, and Nellore are the only ones at all well supplied with tanks. The largest of these sources are those at Nellore, Buchireddipālem, and Allūr in Nellore, at Anantasāgaram and Kaluvāya in Atmakūr, and at Survepalli in Gūdūr. Wells, numbering 17,000 in all, are commonest in the northern and western parts, and each irrigates from $2\frac{1}{2}$ to 3 acres on an average. Water is found only at a great depth in some of the Kanigiri and Udayagiri wells, but these generally irrigate as much as from 4 to 5 acres each.

Forests.

The 'reserved' forests and 'reserved' lands cover 747 square miles, divided into six ranges, each under a range officer. They consist roughly of three classes: the western forests, the central belt, and the coast Reserves. In the central belt the growth is, generally speaking, of poor quality, and the areas

'reserved' usually contain nothing but stunted scrub. In the western hills trees of greater size are met with. The principal forests here lie along the slopes of the Velikonda hills in the *tāluks* of Rāpūr, Atmakūr, Udayagiri, and Kanigiri. They are in blocks alternating with *zamīndāri* land belonging to the Venkatagiri and Kālahasti estates. The Nandavanam Reserve in Kanigiri, the Udayagiri Reserve, and the Rāpūr, Velikonda, and Yerrakonda Reserves are the principal of these. In them occur the red-sanders tree (*Pterocarpus santalinus*), the *yegi* or *kino* (*Pterocarpus Marsupium*), *yepi* (*Hardwickia binata*), *billu* or satinwood (*Chloroxylon Swietenia*), and a few other useful species. The best of the coast forests is in the island of Srīharikota. The more valuable timber trees found there are the *neredu* (*Eugenia Jambolana*), *solagu* (*Pterospermum suberifolium*), and *mushti* (*Strychnos Nux-vomica*). Soap-nut and tamarind trees also occur in great numbers, and a large area has been planted with casuarina. A tramway 13 miles long has been laid down in the island to assist in removing the wood. The minor produce exported from this tract consists of tamarinds, honey, rattan, soap-nuts, sarsaparilla, strychnine seeds, and myrabolams. All along the coast large plantations of casuarina have been made. In many parts of the District palmyra palms abound.

A portion of the forests is closed to grazing, but to the remaining area cattle are admitted on payment of the prescribed fee. Goats are only allowed to browse in specially selected Reserves. Firewood, the royalty on mica (see below), and grazing fees are the chief sources of forest revenue. The total receipts in 1903-4 amounted to Rs. 1,50,000.

Minerals.

Of the minerals of the District only mica is at present worked to any large extent. Copper was discovered in 1801 in the villages of Garimenapenta and Yarrapalli in Udayagiri. Iron ore is widely distributed, and used to be smelted in native furnaces in several villages in the middle of the last century. Magnetic iron beds of great size occur near the Gundlakamma river in Ongole. Gypsum, in the form of selenite crystals, is found in the marine clayey beds in the northern parts along the Buckingham Canal. Garnet occurs in the Chundi hills, in Pecherlakonda in Udayagiri, and at Saidāpuram in Rāpūr. Large deposits of laterite are found in various localities, such as Kāvali, Nellore, and Talamanchi, and are largely used for making roads and building purposes. Greyish-white crystalline limestone can be obtained near Chundi and Pedārikatla in Kanigiri. A good deal of lime is manufactured from *kankar* and the shell-beds in the backwater deposits. Sandstone is found near Kovūr, north of Nellore, and at Budavāda, Rāzpudi, and Vemavaram in Ongole. The stone near Rāzpudi is in flaggy beds and is largely quarried for building purposes, being prettily coloured. Greenstone or diorite is found near Jelakapād, and trap dikes near Peramkonda,

and Ullapuram. Crude saltpetre is manufactured in many villages by lixiviation. The Salt department also manufactures refined saltpetre in the Kanuparti factory. A large quantity of salt is made yearly in the Government factories along the coast. Diamonds are said to have been found near Chejerla.

The history of the mica industry can be traced back 60 or 70 years. It flourished greatly for a time, but now a decline has made itself apparent. In 1900–1 more than a million pounds, valued at $7\frac{1}{2}$ lakhs, was extracted, but in 1903–4 the quantity had fallen to 502,000 lb., valued at less than $4\frac{1}{2}$ lakhs. The majority of the mines consist of large open pits, from which the mineral is removed by manual labour. Only a few contain underground tunnels. The mineral is found in Rāpūr, Atmakūr, Gūdūr, and Kāvali, the largest number of mines being in the first-named *tāluk*. There were 60 mines in the District in 1904, of which 44 are situated on Government land, and the remainder in *shrotriems* and *zamīndāris*. Of these, 56 were working in 1904 as against 36 in 1901. The mica obtained is of good quality, and most of it is exported to London. It is of several kinds, and is either clear or stained, the latter being coloured brown or black owing to the presence of iron and manganese between the planes of cleavage.

Trade and communications.

The industries of the District, other than agriculture and cattle-breeding, are on a very small scale. Nellore town was once famous for its cotton cloths and textile fabrics. The cloth now made is generally of the commonest description, though a small amount of better quality is still produced. Blue palampores used to be exported in large quantities to the West Indies, but the trade has died out. A small quantity of rough woollen blankets is produced. Brass and copper utensils are manufactured in several localities. At Udayagiri one family turns out fairly good wood-carving. The construction of country carts with stone wheels is a peculiarity of Kanigiri, and in the same village spinning tools, razors and scissors, and excellent slippers are manufactured. Indigo is grown throughout the District, but no factories are working now, and the dye is manufactured in vats according to native methods. Tanning of skins is carried on to a small extent in many localities.

The extension of railways has affected the trade, which used to come across the Velikondas from the Districts in the interior, but this is almost dead. The principal exports at present are rice, 'dry' grains, indigo, cotton, *ghī*, salt, oilseeds, condiments, firewood, salted fish, hides, horn, tobacco, lime, palmyra rafters, cloth, and brass and copper vessels. The chief imports are hardware, petroleum in bulk, jaggery, sugar, spices, &c. As already remarked, a large trade is done in cattle. Goats also are a considerable item of commerce in Rāpūr. Both imports and exports are mainly from and to the neighbouring Districts

and Madras city. The chief centres of trade are Nellore, Ongole, Gūdūr, Kāvali, Kandukūr, Addanki, Allūr, Venkatagiri, and Sūlūrpet. The only port at which there is any sea-borne trade is Kottapatam. The value of the sea-borne imports during the four years ending 1901–2 averaged Rs. 10,000, and of the exports Rs. 19,000.

The earliest railway to be opened in the District was the extension of the South Indian line from Tirupati to Gūdūr and Nellore, which was constructed in 1887–8, originally on the metre gauge. It passes through Renigunta, Kālahasti, and Venkatagiri, and so affords communication with North Arcot. The section between Gūdūr and Nellore was converted to standard gauge in 1899, and now forms a part of the East Coast line of the Madras Railway. This latter, which traverses Nellore from south to north, was opened for traffic in 1898–9. It enters the District near Arambākam, 38 miles north of Madras city, and after running through it roughly parallel to the coast for 153 miles, leaves it a mile north of Ammanabrolu. The Southern Mahratta Railway line from Guntakal to Bezwāda, which passes through the north-western corner of the District, was completed in 1894.

The total length of metalled roads is 1,010 miles, and of unmetalled roads 148 miles. All these are maintained from Local funds, and avenues of trees have been planted along 435 miles of them. The great northern road runs from north to south, parallel with the railway almost throughout its whole length. The main lines of communication which cross the District from east to west are the Ongole-Cumbum road through Podili, the road through Kandukūr and Kanigiri, that from Kāvali to Udayagiri via Vinjamūr, that from Nellore to Cuddapah via Atmakūr, that from Nellore to the Cuddapah frontier via Podalakur, and that from Gūdūr to the Rāpūr pass. The road system of the District is by no means fully developed.

The Buckingham Canal is the only navigable water-way. It communicates with the fresh-water high-level canals of the Kistna delta system at Pedda Ganjām, and thus affords uninterrupted communication with Cocanāda on the north and Merkānam in South Arcot on the south.

Famine.

Nellore, with its scanty rainfall and limited means of irrigation, is always liable to famine. The *tāluks* south of the Penner, which receive a fairly good fall and are well supplied with tanks, are better protected from drought than those in the north and west. The District was visited by famine in 1805–7, 1823–4, 1833, 1876–8, and 1891–2. Relief operations had moreover to be started in 1897–8, and again in 1900. During the famine of 1824, 2,000 people are said to have been fed for three months. The northern *tāluks* suffered terribly during the Guntūr famine of 1833, when 10,000 people were being fed daily in Nellore town alone. In

1876–8 there was an almost entire failure of crops, except in parts of the northern *tāluks* and the Venkatagiri *zamīndāri*. At the height of this famine, the average daily number relieved during twelve months amounted to 82,500. In 1891–2 relief works were opened in the southern and north-western *tāluks*, and the average number relieved was 6,300.

Administration.

The District comprises nine Government *tāluks*[1], each under a *tahsīldār*, and four independent deputy-*tahsīldārs*' divisions or *zamīndāri tahsīls*. The northern portion is generally under a Covenanted Civilian, who administers the *tāluks* of Ongole, Kandukūr, and Kanigiri, and the *zamīndāri tahsīls* of Darsi and Podili. The head-quarters subdivision, which is in charge of a Deputy-Collector, comprises the *tāluks* of Nellore and Kāvali. The Atmakūr subdivision, which is also under a Deputy-Collector, comprises Udayagiri and Atmakūr. The Deputy-Collector at Gūdūr is in charge of Gūdūr and Rāpūr, and the *zamīndāri tahsīls* of Venkatagiri and Polūr or Sūlūrpet. There are stationary sub-magistrates at Nellore, Gūdūr, Ongole, Kandukūr, and Atmakūr; and deputy-*tahsīldārs* at Kota in Gūdūr, Allūr in Nellore, and Addanki in Ongole.

The *zamīndāris* occupy no less than 3,700 square miles, and are four in number. The largest is the VENKATAGIRI ESTATE, which is described in a separate article. The Kālahasti estate of North Arcot owns 190 villages in Udayagiri, Kanigiri, Atmakūr, Kāvali, and Kandukūr. The *peshkash* for the portion of the estate situated in this District is Rs. 80,500. The Chundi *zamīndāri* consists of 35 villages, and pays a *peshkash* of Rs. 20,600. The *zamīndār* of Mutyālapād owns three villages in Kandukūr *tāluk*, the *peshkash* for which is Rs. 2,100.

Civil justice is administered by the District Judge, whose head-quarters are at Nellore town, and by District Munsifs at Nellore, Kāvali, Kanigiri, and Ongole. There is no Subordinate Judge in the District, and the appeals from the District Munsifs are disposed of by the District Judge. A large number of *zamīndāri* revenue suits are instituted every year before the revenue courts. The number of these between 1899 and 1901 averaged 2,200 a year, being in excess of the figures for most other Districts. Criminal justice is dispensed by the Sessions Court, the divisional magistrates, and the usual subordinate magistracy. Yerukalas, Yānādis, and the lower castes of the population commit a good deal of theft, and road dacoities are rather common. On the whole, however, the people are quiet and law-abiding.

[1] Since the transfer of the Ongole *tāluk* to Guntūr District the subdivisions have been rearranged. The northern (Kandukūr) subdivision is now under a Deputy-Collector, and the southern (Gūdūr) under a covenanted Civilian.

Little is known of the revenue history of the District under the Hindus. The government share of the crop varied in different localities, and the rates are supposed to have been generally increased by the succeeding Muhāmmadan rulers. 'Wet' lands were usually held on a tenure based on the division of the crop. It is probable, however, that in many cases of occupation of garden and waste lands the tenants paid a fixed customary rent. The collection of revenue was as usual supervised by the village *karnam* (accountant) and headman, the district accountant (called the *sthala karnam*), and the *deshmukh.*

Under the Nawābs of Arcot the country was parcelled out into large divisions, and the right of collecting all the demands of the state on each of these was farmed out to the highest bidder. These lessees generally employed sub-renters, who were often the head inhabitants of villages, and the effects of the system were notoriously bad.

Besides the land revenue, the state used to levy a number of indirect taxes, such as salt tax, *rāhdāri* (or transit) duties, *pullari* (or grazing tax), *mohtarfa* (or profession tax), and various export and import and other duties. The ryots had also to pay the customary fees (*merahs* and *rusūms*) to the village officers and the hereditary *poligārs* and *kāvalgārs*, who were originally responsible for the police administration.

The Company took over the administration of the District temporarily for two years in 1790. Mr. Dighton was appointed the first Collector of Nellore and its dependencies, and Mr. Erskine of Ongole and the Palnād region. The revenue collections at this date never exceeded 3 lakhs of pagodas for Nellore and 85,000 pagodas for Ongole. Neither the Venkatagiri *samīndāri* nor the *tāluk* of Kanigiri formed part of the District at that time; they were added subsequently, and it was not till 1863 that the District attained its present shape, Srīharikota Island having been included in it in that year. Nellore was finally handed over to the Company in 1801. Mr. Travers, who was appointed Collector, at once introduced the *ryotwāri* system. The settlement effected under the rules then in force differed in many respects from the present system. No attempts were made to calculate the out-turn or survey the fields accurately. The Government demand was fixed at a customary rate of eleven-twentieths of the gross produce, after deducting 6½ per cent. for fees to village officers. The average rate per acre was Rs. 7 for 'wet,' and Rs. 2–8 for 'dry' land. The total assessment for the first five years varied from 16 to 20 lakhs of rupees. These rates were too high, and the system broke down under the pressure of bad seasons. The village rent system was introduced in 1809. The *ryotwāri* system was, however, reverted to in 1821–2, and has continued ever since. Between 1854 and 1858 the rates were reduced by 14 per cent. on 'wet' and 6¼ per cent. on 'dry' land. In 1866 garden land not irrigated with Government water was classed as 'dry.' The *mohtarfa*

was abolished in 1861 and the *pullari* tax in 1867. A regular survey of the District, begun in 1861, added 16½ per cent. to the recorded occupied area. The District was settled according to the present system between 1873 and 1875, the land revenue demand being enhanced by Rs. 1,88,000, or 11 per cent. The average assessment on 'dry' land works out at Rs. 1-3-6 per acre (maximum Rs. 5, minimum 4 annas), and that on 'wet' land at Rs. 5-5-7 (maximum Rs. 10-8, minimum Rs. 2). The average extent of a holding is 9½ acres. The District is now being resurveyed, and it is proposed to revise the settlement immediately.

The revenue from land and the total revenue in recent years are given below, in thousands of rupees :—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . .	28,46	32,25	32,17	31,61
Total revenue . .	31,91	38,52	40,70	43,36

Owing to the transfer of the Ongole *tāluk* to the new District of Guntūr, the land revenue demand has been reduced to Rs. 21,57,000.

The local affairs of the District are managed by the District board and the four *tāluk* boards of Ongole, Nellore, Gūdūr, and Atmakūr, corresponding to the four administrative subdivisions mentioned above. The total expenditure of these bodies in 1903-4 was about 4 lakhs, the chief item being the upkeep of roads and buildings. Of their income, 2½ lakhs was derived from the land cess. There are fifteen Union *panchāyats*, which look after the sanitary and other needs of their respective villages, besides two municipalities.

The District Superintendent of police resides at Nellore town and has general control over the force throughout the District. An Assistant Superintendent at Ongole is in immediate charge of the *tāluks* in the north. There are in all 94 police stations, and the force numbers 989 constables, under 18 inspectors. The strength of the reserve is 54 men. The rural police consists of 1,004 *talaiyāris*, working directly under the village headmen. The District jail at Nellore is under the superintendence of the District Surgeon. It is an old building, with accommodation for 231 males and 14 females, as well as 27 persons in the hospitals. There are 15 subsidiary jails, at the head-quarters of the *tahsīldārs* and deputy-*tahsīldārs*, with a total accommodation for 255 prisoners.

Nellore stands fifteenth among the twenty-two Districts of the Presidency in regard to the literacy of its population, of whom 4·1 per cent. (8·9 males and 0·6 females) were able to read and write in 1901. Education is most advanced in Nellore and Ongole, and most backward in Rāpūr and Udayagiri. Progress has been considerable in recent years.

In 1880–1 the total number of pupils under instruction was 10,196; by 1890–1 it had risen to 21,836, and by 1900–1 to 26,679; in 1903–4 it was 29,425, including 5,205 girls. In 1904 the District contained 1,117 educational institutions of all kinds. Of the 910 classed as public, 12 were managed by the Educational department, 80 by local boards, 4 by municipalities; 436 received grants-in-aid, and 378 were unaided but conformed to the rules of the department. They included one college, 19 secondary, 883 primary, and 7 training and special schools. Of the male population of school-going age 17 per cent., and of the female population 5 per cent., were in the primary stage of instruction. Among Musalmāns, the corresponding figures were 32 and 4. Of the Māla and Mādiga classes, the two most depressed communities in the District, 2,112 boys and girls were under instruction in 318 schools in 1903–4. The missions have done much to encourage education among these people. The American Baptist Mission maintains a college at Ongole which teaches up to the F.A. standard. Other important institutions are the United Free Church Mission high school and the Venkatagiri Rājā's high school at Nellore. The total expenditure on education in 1903–4 was Rs. 1,77,000, of which Rs. 51,000 was derived from fees. Of the total, 62 per cent. was devoted to primary schools.

There are 10 hospitals and 17 dispensaries, which are situated at the principal towns. The medical institutions (four in all) at Nellore and Ongole are managed by the two municipalities at those places. A maternity hospital was built at Nellore to commemorate the Jubilee of Queen Victoria. The various Local fund hospitals contain accommodation for 28 in-patients, and there is room for 78 more in the municipal institutions. In 1903 the total number of cases treated was 260,647, of whom 1,112 were in-patients, and 4,123 operations were performed. Local and municipal funds met the greater part of the expenditure, which amounted to Rs. 43,000. Of this sum establishment charges absorbed Rs. 24,000, and Rs. 13,000 was spent on medicines.

The District is rather backward with respect to vaccination, the number of persons successfully treated in 1903–4 being only 24 per 1,000 of the population, as against a mean of 30 for the Presidency. Vaccination is compulsory in the two municipalities of Nellore and Ongole, and in seven of the Unions.

[For further particulars of Nellore District see the *Manual of the Nellore District*, by J. A. C. Boswell (1873), and *Inscriptions on Copper-plates and Stones in the Nellore District*, by A. Butterworth and V. Venugopāl Chetti (Madras, 1905).]

Nellore Subdivision.—Subdivision of Nellore District, Madras, consisting of the NELLORE and KĀVALI *tāluks*.

Nellore Tāluk.—*Tāluk* in the centre of the District of the same name, Madras, lying between 14° 21′ and 14° 46′ N. and 79° 43′ and 80° 11′ E., and bounded on the east by the Bay of Bengal. Its area is 638 square miles, and the population in 1901 was 226,383, compared with 197,912 in 1891. The *tāluk* contains two towns, NELLORE (population, 32,040), the head-quarters of both the District and the *tāluk*, and ALLUR (7,527); and 149 villages. The demand on account of land revenue and cesses in 1903–4 amounted to Rs. 8,55,000. The Penner river separates the *tāluk* into two portions, and the Paideru and the Maldevi drain the northern half. There is an anicut across the Penner at Nellore town, and another at Sangam, built in 1882–6. From the latter three main channels irrigate the southern portion of the *tāluk*; while another channel from the former feeds an immense reservoir, known as the Kanigiri tank, from which several minor irrigation channels supply the northern portion. The *tāluk* is distinguished from other parts of the District by the prevalence of wide alluvial deposits. More than three-fourths is included in the Penner delta, and rice cultivation is extensively carried on there.

Nellore Town.—Head-quarters of the District and *tāluk* of the same name, Madras, situated in 14° 27′ N. and 79° 59′ E., on the right bank of the Penner river, on the great northern road from Madras to Calcutta and on the East Coast Railway, 109 miles from Madras city. The population in 1901 was 32,040, consisting of 25,229 Hindus and Animists, 5,786 Musalmāns, and 1,025 Christians.

The earliest chieftain of the place is said to have been one Mukkanti, who ruled in the eleventh century as a tributary of the Chola kings. The next whose name has been preserved by tradition is Siddhi Rājā, who held it in the twelfth century. Power passed from the Cholas to the Warangal Ganpatis, then to the Muhammadans and local chiefs, till Krishna Deva of Vijayanagar subdued the country about 1512. The town first attained historical importance in the eighteenth century, when the English and the French were contesting the supremacy of Southern India. It formed part of the dominions of the Nawāb of the Carnatic, and possessed strategic importance as commanding the northern high road and the passage of the Penner. Its fort, portions of the wall and ditch of which are still visible, was probably built about this time. In 1753 it was the apanage of Najīb-ullah, a brother of the Nawāb Muhammad Alī whom English support had placed on the throne. He was driven out of Nellore in that year by Muhammad Kamāl, a military adventurer. This man threatened to sack the temple at Tirupati, which had been pledged to the English, but was eventually defeated and taken prisoner by them. In 1757 Najīb-ullah rebelled against the authority of his brother, the Nawāb. An army of 10,000 men was sent against him, including a European contingent under

Colonel Forde. Najīb-ullah left the town to be defended by a garrison of 3,000 men, assisted by 20 French from Masulipatam. After a few days' bombardment, a breach was made in the mud wall, but the storming party, consisting mainly of the British contingent, was repulsed with loss. Najīb-ullah remained in arms throughout the following year; but when the French under Lally withdrew from before Madras in 1759, he submitted and was reappointed governor of the country. During the wars with Haidar Alī, Nellore to a great extent escaped the general devastation. In 1790, on the breaking out of the war with Tipū Sultān, the British resolved to undertake the direct management of the revenues of the Carnatic, which had long been pledged to them by the Nawāb, and Mr. Dighton was appointed the first Collector of Nellore. At the conclusion of the peace with Tipū in 1792 the administration was restored to the Nawāb, but it was permanently assumed by the British in 1801.

Besides the usual administrative offices, Nellore possesses a small District jail, in which the convicts are employed in gardening and weaving. The houses of the European residents are on the south of the native town along the bank of a large tank, on the farther side of which rises the temple-crowned hill of Narasimhakonda. Nellore was constituted a municipality in 1866. The receipts and expenditure during the ten years ending 1902–3 averaged Rs. 44,000. In 1903–4 the receipts were Rs. 55,000, the chief sources being the house and land taxes (Rs. 17,700) and tax on vehicles and animals (Rs. 6,000); while the main items of expenditure were conservancy (Rs. 14,000), medical needs (Rs. 10,000), and roads and buildings (Rs. 7,000). The municipal hospital contains beds for 40 in-patients. Surveys and levels have been taken for a scheme for supplying the place with water. The average rainfall is about 36 inches. In the hot season, temperatures of 112° and over in the shade are not uncommon.

Nellore is not of much industrial importance, the only factories or crafts being a rice-husking mill, a private workshop in process of development, and the dyeing of cloths. The chief educational institutions are the United Free Church Mission high school and the Venkatagiri Rājā's high school, both educating up to the matriculation standard. The former was established in 1841 and the latter in 1876. The American Baptist Mission and the Roman Catholic Mission, both of which have been long settled in the town, also maintain several schools.

Nemār.—*Zila* in Indore State, Central India. *See* NIMĀR ZILA.

Nemāwar.—District of the Indore State, Central India, lying between 22° 17′ and 22° 55′ N. and 76° 30′ and 77° 11′ E., on the north bank of the Narbadā, with an area of 1,059 square miles. The greater part lies in the fertile alluvial plain which forms the valley

of the Narbadā. To the north it is bounded by the Vindhyan range, on the slopes of which grow forests of considerable economic value. Besides the Narbadā, several tributaries, the Chankeshar, Datunī, Bagdī, and other smaller streams, afford an ample supply of water. The annual rainfall is 29 inches.

Nemāwar is closely connected historically with the neighbouring British District of NIMĀR, south of the river. Albirūnī (A. D. 970–1039) mentions travelling from Dhār to Nemāwar. From the tenth to the thirteenth century it was held by the Paramāra kings of Mālwā, in whose time the fine Jain temple at Nemāwar village was erected. Under Akbar the district was included in the Hindia *sarkār* of the *Sūbah* of Mālwā. Between 1740 and 1745 part of this district fell to the Peshwā, some of its *parganas* passing in 1782 to Sindhia. In the early years of the nineteenth century the notorious Pindāri leader Chītū made his head-quarters at Satwās and Nemāwar, and in 1815 collected in this district the largest Pindāri band ever assembled. In 1844 some *parganas* were included in the districts assigned for the upkeep of the Gwalior Contingent. After the disturbances of 1857 a portion of Nemāwar remained under British management until 1861, when it was made over to Holkar in exchange for certain lands held by him in the Deccan.

The population decreased from 97,363 in 1891 to 74,568 in 1901, giving a density in the latter year of 70 persons per square mile. There are 337 villages. The district is in charge of a *Sūbah*, whose head-quarters are at SATWĀS. It is divided for administrative purposes into three *parganas*, with head-quarters at Khātegaon, Kāntāphor, and Kannod, each in charge of an *amīn*, who is magistrate and revenue collector of his charge. The total revenue is 3·6 lakhs.

Nepāl.—The kingdom of Nepāl, the land of the Gurkhas, is a Native State on the northern frontier of India, extending along the southern slopes of the Himālayas for a length of about 500 miles. Its general direction is from north-west to east, between the 80th and 88th degrees of E. longitude, the most southern and eastern angle reaching as low as the 26th, and its most northern and western corner as high as the 30th degree of N. latitude. In shape, therefore, the country is long and narrow, varying in breadth from 90 to 100 miles, while its area is estimated at 54,000 square miles. Along its northern boundary Nepāl adjoins Tibet; on the east it is bounded by the State of Sikkim and the District of Darjeeling; on the south by Bengal and the United Provinces; and on the west by Kumaun and the river Kālī. Nepāl is thus contiguous on three sides to British territory. Very little is known of its northern frontier, which is formed by the eternal snows of the Himālayas; and it is probable that this frontier is not strictly defined, except at the accessible points of the passes leading into

Tibet, where Chinese and Nepālese frontier-posts and custom-houses are established.

Physical aspects.

Orographically the country can best be described as consisting of four zones, running successively upwards from east to west. (1) The Tarai, the lowland at the foot of the hills, is a narrow belt which varies in width from 10 to 30 miles. (2) The Sandstone range, with its *dūns* or valleys, rises some 600 to 800 feet above the Tarai, and is a continuation of the range known as the SIWĀLIKS. It runs in practical continuity along the whole length of Nepāl, the only breaks in the chain being caused by rivers forcing an outlet. The range is covered with thick jungle, as are the valleys lying behind it. These are at an elevation of about 2,500 feet, and connect the Sandstone range with the Himālayas. (3) From the northern extremity of the *dūns* the main range of the Himālayas rises to the north, hill succeeding hill and peak rising above peak, until they culminate in the vast snowy range which runs in majestic grandeur along the northern frontier of Nepāl. This hill region, up to an elevation of 10,000 feet, may be taken as the third zone, the fourth being formed by the mountain region above that altitude. The hill country, composed of a series of ranges varying from 5,000 to 10,000 feet, necessarily encloses many valleys. These lie mostly at an elevation of 4,000 feet, and, with the exception of the valley of Kātmāndu, or, as it is more frequently called, the Valley of Nepāl, are of small size. Being well watered they are highly cultivated, and many of them are thickly populated. (4) Of the mountain region but little is known. The lower slopes are cultivated; but above these the region presents a rugged broken wall of rock, leading up to the magnificent chain of perpetual snow-clad peaks which culminate in MOUNT EVEREST (29,002 feet), and others of slightly less altitude.

The territory of Nepāl within the hills is divided into three large natural divisions by lofty ridges which take off from the high peaks of Nanda Devī (25,700 feet), Dhaulāgiri (26,826), Gosainthān (26,305), and KINCHINJUNGA (28,146). These ridges stand out at right angles from the central axis of the Himālayas, and run, parallel to each other, nearly due south towards the plains. Each of the three divisions receives its name from the river by which it is drained: namely, the western division, or mountain basin of the KAURIĀLĀ (Karnāli) or GOGRA; the central division, or mountain basin of the GANDAK; and the eastern division, or mountain basin of the KOSI.

The western division is divided into two unequal parts by the Kāli or SĀRDĀ river, which forms the boundary between Nepāl and Kumaun. The territory on the left bank is Nepālese. The most important tributaries of the Kauriālā river are the Kālī, Babai, and Rāptī. They all break through the Sandstone range by different passes, and do not

unite until they have traversed the plains for some distance, when they flow into the valley of the Ganges.

The central division has been called by the Nepālese from time immemorial the Sapt Gandakī, or 'country of the seven Gandaks,' from the seven streams which, uniting, form the main river. By these the whole country between Dhaulāgiri and Gosainthān is drained. The most important of them is the most easterly, the Trisūlganga. They all unite before breaking through the hills at Tribenī.

The eastern division is similarly known as the Sapt Kosi, or 'country of the seven Kosis,' of which the most important is the San Kosi. After leaving the hills at Chatra, the Kosi becomes a very broad river. It is said that in places its bed is above the level of the surrounding country, in consequence of which it is constantly overflowing its banks, altering its channel, and causing widespread destruction of crops and property.

Besides these three great geographical divisions, there is a fourth, of comparatively limited extent, but historically and economically the most important, for it contains the Valley of Nepāl proper, with Kātmāndu, the capital of the kingdom. This district occupies an isolated tract between the basins of the Gandak and the Kosi, and is formed by the bifurcation of the ridge running south from Gosainthān. It is a gently undulating plain of nearly oval shape, having an average length from north to south of about 20 miles, and an average width of 12 to 14 miles; and it lies 4,700 feet above the level of the sea. It covers about 250 square miles, and is surrounded on all sides by mountains which rise to a height of 7,000 to 9,000 feet. The valley is abundantly watered and drained by a small river, the Bāghmati, which rises on the northern slopes of Sheopuri, the highest mountain forming its northern limit. In its course through the valley the Bāghmati receives innumerable smaller streams, the most important of which is the Vishnumati. The narrow gorge where the united waters leave the valley, Pherping, is the only break in the enclosing circle of mountains. According to ancient Hindu traditions, what is now the Valley of Nepāl was once a large and deep lake, and from a geological point of view this theory is possible. The general surface is broken up into a succession of more or less extensive plateaux.

Nepāl generally is devoid of lakes, though it is said that several exist in the province of Pokhra situated to the west of the Nepāl Valley.

The scenery of Nepāl, as may be gathered from the description of its physical features, is of an exceedingly diversified nature. Skirting the British frontier is the Tarai. This tract, as already stated, lies at the foot of the hills, on a level with the adjoining plains of India. It may be divided into two portions: the open country under cultivation, and primaeval jungle. The latter varies much in character. For the most

part it consists of dense forests of *sāl* trees (*Shorea robusta*), intermixed with *shīsham*, *semal* or cotton-trees, and nearer the hills *chīr* (*Pinus longifolia*). In places it is quite impenetrable, owing to the luxuriant undergrowth and tangle of giant creepers which swing from tree to tree. Here and there the forest is interrupted by stretches of prairie land, whose grass often reaches to a height of 10 to 15 feet; and, where the ground is low-lying and swampy, tracts of *narkat*, or 'elephant-grass,' are found, in some places so dense that not even elephants can work their way through. This grass growth is most marked in the eastern Tarai, where successive floods have swept away the timber. The Tarai is abundantly watered by the various rivers which traverse it to reach the plains. Quicksands, or the still more dreaded *phasan* or bogs, are frequently met with. The latter are waterlogged narrow channels, containing a mass of decaying vegetation, which on the surface appear fordable, but have been known to engulf both men and animals.

Leaving the Tarai, and proceeding inland, the scenery assumes the features of other parts of the Himālayan region, the vegetation varying with the altitude. Here, as elsewhere, the southern faces of the mountains are thickly wooded. Their northern aspects, mostly covered with short grass, lead down to some narrow valley along which runs a mountain torrent. Many of these valleys, as well as the surrounding hill-sides, are highly cultivated, rice being grown on the lower and better watered portions of ground, and maize on the higher. A description of the higher ranges resolves itself into the view from the Valley of Nepāl and the mountains overlooking it, for other parts of the interior are jealously closed to Europeans. To the eastern extremity of the long line of snows, a mountain long supposed to be Everest, but which is really Gaurī Sankar, rises with tooth-shaped summit and saddle-back proudly above its fellow peaks. Being more distant, however, it is not so impressive as the nearer masses of Gosainthān, Dhaulāgiri, and Nanda Devī, which together afford one long continuous series of snow peaks, magnificent in beauty and extent.

[1] Owing to the jealous exclusion of foreigners, little is known about the geology of Nepāl, though enough to establish the existence of sub-Himālayan and outer Himālayan rocks of the same type as in the United Provinces. The only geological account available is that of Mr. H. B. Medlicott, whose investigations extended to a point a little beyond Kātmāndu [2].

The tract rising out of the Gangetic alluvium and *bhābar* deposit of coarse gravels presents all the features of the ordinary sub-Himālayan

[1] This paragraph is based on a note communicated by Mr. C. S. Middlemiss, of the Geological Survey.

[2] 'Note on the Geology of Nepāl,' *Records, Geological Survey of India*, vol. viii, part iv.

area. It begins with the Churiā Ghāti range, which is the exact equivalent of the typical Siwālik range south of Dehra Dūn, being composed of soft sands and conglomerates of coarse river boulders. The dip is gentle and towards the main range, flattening out in the *dūn* or *mari* of Etoundah, which corresponds to the Dehra or Patli *dūns*. Beyond, harder but still soft sandstones of Nāhan type form the lower spurs of the main range, and are apparently cut off from the older rocks of the range by a reversed fault, as is the case farther north-west. The whole of this sub-Himālayan series, which aggregates 10,000 feet in thickness, is presumed by analogy to be of Upper Tertiary age. The older rocks of the main range comprise a much-folded sequence of earthy schists, with thin blue limestone beds, black schistose slates, white massive crystalline limestone, quartz-schists, and gneissose granite, the last being porphyritic, and containing mica and schorl. The general strike is with the main Himālayan chain, and the apparent dip is towards the north-east, complicated no doubt by inversion and overthrust.

The Valley of Nepāl contains representatives of the *karewas* of Kashmīr and of the *bāngar* and *khādar* alluviums of the Ganges valley—all surface deposits laid down in the valley basin within recent or post-pliocene times. With them occur beds of peat and phosphatic blue clays, which are used for fertilizing the fields.

The flora of Nepāl, throughout the various zones, from the tropical to the sub-alpine and alpine, may be said on the whole to correspond on the east with the species met with in Sikkim and on the west with those of Kumaun and Garhwāl.

In the thick jungles of the Tarai most of the wild animals known in India are to be found. Though their numbers are probably decreasing, owing to the encroachments of cultivation and the increasing number of sportsmen, there are still tracts of jungle where game abounds. Wild elephants are met with in the eastern Tarai, though not in such large numbers as was formerly the case. They are not allowed to be shot, their capture being one of the great sports of Nepāl as well as a source of revenue. The Nepālese system of capturing the animals differs from the Khedda operations in other parts of India. It consists of driving the wild herd, by means of tame elephants and an army of beaters, into some well-known narrow valley from which it is difficult for them to escape, an undertaking that often occupies weeks. The big tuskers, who generally remain more or less apart from the herd, are then singled out, and each is separately chased by tame elephants until it is brought to bay, when special fighting elephants are brought up. As soon as these sight and scent the wild elephant they rush with fury upon him, and then ensues a battle of Titans: head down they charge and charge again with a crash as of ironclads colliding, belabour each other with

their trunks, and prod one another with their tusks. When the wild animal can no longer offer any resistance, his hind legs are securely bound together with ropes, and he is hustled into camp or secured to some large tree close by. The females and young are lassoed. In the Tarai the rhinoceros, the tiger, the leopard, and the sloth bear are still plentiful, and the wild buffalo is occasionally seen. In certain grassy tracts hog deer and hog abound, while in the forests and lower hills the *sāmbar* and *chītal* find shelter. The mountainous districts contain all the game common to such localities.

The climate of Nepāl varies with the altitude and the rainfall. In the Tarai, where the rainfall is often very heavy, the climate is exceedingly unhealthy between May and December. A very severe type of malaria, called by the natives *aul*, prevails throughout these lowlands, and is deadly to all except the Thārus. The last named are aborigines of the Tarai and appear to enjoy immunity from fever there, though it is said that on settling elsewhere they are liable to suffer from malaria. Up to an elevation of 3,000 to 4,000 feet, which would include all the valleys or *dūns* between the Sandstone range and the Lower Himālayas, the climate during, and just after, the rainy season is also malarious. Above this height, as for example in the Valley of Nepāl, the climate is excellent, resembling that of the South of Europe as regards temperature, though from June to October the moisture of the air is greater. The annual rainfall at Kātmāndu averages 56½ inches, of which about half falls in July and August, and the greater part of the rest in May, June, and September. At still higher elevations no observations have been taken, but the rainfall is considerably in excess of that which the valleys receive. In this, as in other respects, the climatic conditions resemble those of other parts of the Eastern Himālayas.

Observations recorded at Kātmāndu between 1878 and 1901 give the following average temperatures for four representative months: January, 51·9°; May, 71·6°; July, 77·0°; November, 60·2°.

History.

Ancient chronicles have been kept in Nepāl, as in Kashmīr, from which some information of historical value can be drawn. The early history, as usual, is legendary; and we find kings from Gaur (Bengal), or from Kānchi (Conjeeveram), reigning alternately with gods and demons. The earliest dynasty named is one of eight Ahīrs from Gujarāt, followed by three of the same race from Hindustān. These were conquered by Kirātas from the east, of whom twenty-nine reigned. The seventh of these was killed while helping the Pāndavas in the great war recorded in the Mahābhārata, and in the reign of the fourteenth Asoka visited Nepāl and his daughter married a Kshattriya who founded Deva Pātan. The last Kirāta was conquered by a Somavansi Kshattriya, whose fourth descendant subdued the whole of India and, being childless, adopted

a Sūryavansi. In the time of the eighteenth king Sankarāchārya visited Nepāl and reformed Hinduism. The thirty-first king gave his daughter to Ansu Varman, a Thākur who was crowned, according to the chronicle, in 101 B.C. At this point the evidence of inscriptions makes it possible to check the absolutely unreliable dates of the chronicler. The Chinese pilgrim Hiuen Tsiang, who visited India towards the middle of the seventh century A.D., mentions An-chu-fa-mo, who is identified with Ansu Varman, as a king of Nepāl. Inscriptions containing this name are known, and are dated (apparently in the Gupta and Harsha eras) in various years from A.D. 635 to 649 or 650. Ansu Varman and Siva Deva I were apparently both ruling in Nepāl as feudatories of Harshavardhana of Kanauj. On the death of the latter Ansu Varman seems to have become an independent sovereign, and was probably the king of Nepāl who brought 7,000 horsemen to support a Chinese attack on the minister who usurped the throne of Kanauj when Harshavardhana died. One of the successors of Ansu Varman married the daughter of a Maukhari chief, who was also the grand-daughter of a king of Magadha. This dynasty, of eighteen kings, was succeeded by five Thākurs from Nayākot, the last of whom was expelled by a collateral descendant of Ansu Varman. The new line consisted of twelve kings, the last two being brothers, one of whom ruled at Kāntipur (Kātmāndu) and Lālita Pātan, while the other founded Bhātgaon. They were conquered by Nānya Deva, who came from the Carnatic and seized the whole country. According to the chronicle this happened in the ninth year of the Nepāl era, which was founded by Rāghava Deva in A.D. 879; and Nānya Deva brought in the Newārs, a tribe of Mongolian origin, whose name, in a different form, is preserved in the present 'Nepāl.'

The reigns allotted to the six kings of this dynasty, as well as to those of the earlier lines, are so long that the chronicler has certainly exaggerated them; and it seems probable that Nānya Deva is the king mentioned in a manuscript as reigning in 1097, and is also the Nānya referred to in an inscription as having been conquered by Vijayasena of Bengal about the end of the eleventh century. The sixth successor of Nānya Deva was dethroned by his own army; and another chief named Mukunda Sena then came from the west, with the Khas and Magars, and conquered the country, but had to fly when a pestilence broke out. Anarchy continued for some years, and petty chiefs ruled the country for a long period. The chronicles now come into line with other historical records which are more reliable, and the lengths assigned to the reigns are reasonable. From 1008 onwards the dates of many rulers are fixed by the colophons of manuscripts as well as by entries in the dynastic lists, but other details of their rule are few. Towards the end of the

thirteenth century predatory invasions by the Khas from the west began. In 1324 Hari Singh Deva, a Sūryavansi who had been driven out of Ajodhyā by the Musalmāns and had settled in the Tarai at Simraun, conquered the Valley of Nepāl, but does not appear to have maintained any effectual authority over it. Towards the end of the fourteenth century there reigned a king named Jayasthitimalla, who was a patron of literature, a great builder of temples, and a legislator. He regulated the rights of property in houses, lands, and *birts* (grants), which now became saleable, and reformed the criminal law. Other rules were made regarding dress; and curious details are given of his division of the people into castes, those who had become Buddhists being received back into Hinduism.

Much of the difficulty in reconciling the chronology arises from the fact that from the earliest times there were often joint rulers, and that sons exercised authority in their father's lifetime. From 1496, or a little earlier, the kingdom was divided between three grandsons of Jayasthitimalla, one of whom ruled at Bhātgaon, another at Kātmāndu, and a third at Banepa. Little is known of the earlier Bhātgaon kings beyond their names and dates. Ratnamalla, the first of the Kātmāndu kings, was a great warrior who subdued the petty Thākur chiefs and the Bhotiās of Tibet; and he is said to have introduced a new copper coinage, specimens of which are, however, not known. In his reign the Musalmans first attacked Nepāl, but never had much success. A later king is said to have visited Delhi, and to have obtained permission to strike silver coin of the standard still used. The Banepa line did not last much more than a century, and the tract they ruled then became subject to Bhātgaon. Early in the seventeenth century the Kātmāndu territory was divided between two sons of the seventh king, one of whom continued to rule at Kātmāndu, while the other lived at Lālita Pātan. From this period the chronology is firmly established by inscriptions, coins, and chronicles; but the records are not of much interest, chiefly dealing with the foundation of temples and monasteries. About the end of the seventeenth century plague appeared and lasted for two years, the daily mortality being thirty to forty.

During the eighteenth century the Newār kingdoms at Bhātgaon, Kātmāndu, and Pātan were constantly at variance; and in the course of one of their struggles Ranjīt Mal, king of Bhātgaon, applied for assistance to Prithwī Nārāyan, the crafty and daring king of the Gurkhas. The Gurkhas were at this time in possession of the hilly tracts to the westward of the valley. They are said to have come originally from Rājputāna, whence they fled early in the fourteenth century, after the capture of Chitor by Alā-ud-dīn Khiljī. After passing through the Kumaun hills, they first settled near Pālpā, and thence gradually extended their dominions. Prithwī Nārāyan gladly availed

himself of the opportunity thus given of establishing a secure footing in Nepāl. Ranjīt Mal, however, soon found out his mistake, and was obliged to come to terms with the neighbouring kings in order to resist the encroachments of the Gurkhas. Nevertheless Prithwī Nārāyan succeeded in taking Kirttipur, a town belonging to the Pātan Rājā, and then proceeded to attack Pātan itself. At this juncture the Nepālese applied for assistance to the British Government. Aid was granted, and Captain Kinloch was dispatched with a small force in the middle of the rainy season. But his force was quite inadequate for the purpose it had in view, and, being still further weakened by sickness, was repulsed before he had penetrated into the valley. The Gurkhas then returned and attacked Kātmāndu. Prithwī Nārāyan, having obtained possession of this city by treachery, directed his attention again to Pātan and later on to Bhātgaon. Both were taken, and in 1769 the conquest of Nepāl by the Gūrkhas was complete.

Prithwī Nārāyan did not long hold the country he had so successfully subdued, as he died in 1771. He left two sons, Singh Partāb and Bahādur Sah, the former of whom succeeded his father. His reign was a short one, for he died in 1775, leaving one legitimate son, Ran Bahādur Sah, who was an infant. The boy's uncle, Bahādur Sah, who had been living in exile at Bettiah, then returned to Nepāl and became regent. The mother of the infant king was, however, opposed to him ; and, after a struggle of some years, in which both parties were alternately successful, Bahādur Sah had to fly to India, where he remained until the death of the Rānī in 1786. He then became regent once more, and so continued until 1795. During his administration the dominions of Nepāl were extended by the annexation of various adjoining principalities, until they reached from Bhutān to Kashmīr, and from Tibet to the borders of the British Provinces.

After the failure of Kinloch's expedition, there was little connexion between British India and Nepāl till the administration of Lord Cornwallis, when negotiations were opened by the Gurkhas, through Jonathan Duncan, then Resident at Benares, which resulted in the commercial treaty of March, 1792. The Gurkhas had previously been extending their conquests in the direction of Tibet, and they finally advanced as far as Digarchi, pillaged the sacred temples, and succeeded in carrying off a large booty. The Emperor of China, as the terrestrial protector and spiritual disciple of the Lāmas, dispatched an army of 70,000 men against the Nepālese, who were overthrown in repeated battles ; and the Chinese army advanced to Nayākot, within 25 miles of Kātmāndu. It was with a view to arrest their progress that the Gurkha chief formed the commercial treaty with the British, to whom he also applied for military aid. Lord Cornwallis offered to negotiate between Nepāl and China, and a mission under Colonel Kirkpatrick

reached Nayākot early in 1792. By this time, however, the Gurkhas had concluded a peace, by which they were compelled to acknowledge the suzerainty of China, and to refund the spoil which they had taken from the Lāmas. This was the first occasion on which a British officer had entered the valley. Colonel Kirkpatrick had instructions to improve the commercial advantages secured by the treaty; but the Gurkhas evaded all his overtures, and he quitted Nepāl in March, 1793.

In 1795 Ran Bahādur Sah removed his uncle from the regency and assumed the reins of government. From this time until 1800 Nepāl was the scene of the most barbarous outrages perpetrated by the king, until at length his conduct became so intolerable that he was driven from the country by Dāmodar Tānde and other chiefs, who obliged him to abdicate in favour of his illegitimate son. This boy being still an infant, one of the legitimate queens became regent. Ran Bahādur Sah retired to Benares, where Captain Knox was appointed to attend him as Political Agent. His presence within British territories was deemed a favourable opportunity for the renewal of attempts to form a closer alliance with Nepāl. It was accordingly decided to open negotiations, with the objects of procuring a suitable settlement for the deposed prince, of giving effect to the treaty of 1792, which had become a dead letter, and of arranging for the apprehension and surrender of fugitive dacoits, who had long given trouble on the frontier. These objects, as well as the establishment of a Residency at Kātmāndu, were provided for by treaty in 1801. Captain Knox, who was appointed Resident, reached the capital in April, 1802, and was well received by the Rānī Regent. Arrangements had just been concluded to give full effect to the treaty when Ran Bahādur's elder Rānī, who had accompanied him to Benares, suddenly returned to Kātmāndu, overthrew the regency, and herself took charge of the young Rājā and the government. It now became the policy of the Darbār to evade fulfilment of their engagements; and their aversion to the presence of the Resident became so marked that in March, 1803, Captain Knox withdrew from Nepāl, and in January, 1804, Lord Wellesley formally dissolved the alliance with the existing government. As a consequence Ran Bahādur was allowed to return to Nepāl, where he inaugurated his reaccession to power by the murder of the leader of the party opposed to his interests. He was himself killed soon after in a dispute with his brother; and Bhīm Sen Thappa, a young and ambitious man who had accompanied him into exile, obtained possession of the person of the young Rājā, and, being countenanced by Ran Bahādur's chief Rānī, assumed the direction of affairs.

From 1804 to 1812 British relations with Nepāl consisted entirely of unavailing remonstrances against aggressions on the frontier throughout

its entire length, and of fruitless attempts to induce the Gurkhas to aid in the suppression of frontier dacoities. Commissioners were finally appointed by the British and the Nepālese to inquire into and adjust all frontier disputes. The result of the investigation was entirely favourable to the British, and in consequence a detachment of regulars was ordered to take possession of the debatable ground. But these being withdrawn during the rainy season, the chief police stations on the frontier were more than once attacked by large bodies of Nepālese. War was now inevitable, and it was formally declared in November, 1814. The invasion of the Gurkha dominions was commenced on the western frontier, beyond the Jumna and near the Sutlej, the country there being considered easier of access than the mountainous barrier on the side of Bengal. But the British troops, in attempting to storm the stockades and hill forts, were repeatedly driven back with serious loss. The most desperate resistance of the enemy was perhaps at Kalanga near Dehra, where General Gillespie fell while encouraging his troops to renew the attack. In 1815 Sir David Ochterlony assumed the chief command. By a series of skilful operations he dislodged the Gurkha troops from the fortified heights of Malaun, and ultimately so hemmed in their renowned commander, Amar Singh, and his son, that they were forced to sign a capitulation, by which they agreed, on being permitted to retreat with their remaining troops, to abandon the whole territory west of the Kālī. In Kumaun, also, the British succeeded in driving the enemy before them; and, in consequence of these successes, a definite treaty of peace was concluded in November, 1815. But the signature of the Rājā being withheld, it was determined to renew the war and strike a decisive blow at the capital. Preparations for this arduous enterprise were made on a great scale, a force being assembled in Sāran which numbered about 13,000 regular troops, of whom 3,000 were Europeans, and a large body of irregulars. This formidable force took the field in the end of January, 1816, and advanced from Bettiah directly on Kātmāndu. The greatest difficulties were encountered, from the ruggedness of the country, in marching along the dry beds of torrents, through ravines, and on the face of precipices. The Gurkhas made a brave resistance, but they were defeated in several encounters, and the British advanced to within three days' march of Kātmāndu. Deeming all further resistance vain, and fearing that if the British troops once entered the Valley of Nepāl it might be taken from them, the Nepālese hurriedly sent an ambassador to the British headquarters to sue for peace; and on March 4, 1816, the unratified treaty of the previous year was duly signed. By this treaty the Nepālese renounced all claims to the territory in dispute, and ceded their recent conquests west of the Kālī, including Kumaun and the sites now occupied by the towns of Dehra Dūn, Almorā, and Simla.

In November, 1816, the young Rājā died of small-pox at the age of twenty-one. He was succeeded by his infant son, Rājendra Bikram Sah, under the guardianship of the Minister, Bhīm Sen Thappa. In 1837 this Rājā's youngest son died suddenly, and the report was spread that he had been poisoned at the instigation of Bhīm Sen or some of his party. Bhīm Sen had to retire, and two years afterwards was forced to commit suicide, while his nephew Mātabar Singh proceeded to the Punjab, where he found service under the Lahore Darbār. Alternate factions now held sway for some years, and incessant family feuds led to the recall of Mātabar Singh, in 1843, to take up the post of Minister. His sway was short, for within two years he was murdered by his own nephew, Jang Bahādur, who from this time played a prominent part in the history of Nepāl. Brave, intelligent, and ambitious, he had early attracted attention; and it was at the instigation of Bikram Sah's Rānī that he murdered his uncle, and in return was appointed to the command of the army. Shortly afterwards, in 1846, Guggan Singh, the new Minister, was assassinated, and the Rānī, with whom he was a favourite, demanded vengeance. Jang Bahādur undertook the task and executed it with alacrity. An assembly of chiefs and nobles was convened within the palace to inquire into the crime and to punish the culprits. Disputes arose, and a refusal on the part of one of the council to carry out the orders of the indignant Rānī resulted in what is now known as the massacre of the Khot, in which 150 Sardārs perished. The slaughter was no sooner over than the Rānī invested Jang Bahādur with the office of Minister. A month later a conspiracy was formed for his destruction, in which the Rānī was implicated, but Jang Bahādur seized and beheaded all the adherents of the chief conspirator. The Rānī was banished with her two younger sons; and as the Rājā accompanied them, the heir-apparent, Surendra Bikram Sah, was raised to the throne.

Jang Bahādur proved himself a strong, sagacious, and just ruler. With the complete overthrow of the various parties opposed to him, and with the young Rājā reduced to a mere cipher, all power became vested in his person. Towards the British he always professed a very friendly feeling, which was heightened by a visit to Europe in 1850. This visit marks an epoch in the history of Nepāl. It proved the strength of Jang Bahādur's position, inasmuch as he dared to leave, within four years of his accession to power, a country whose past history was one of continuous intrigue and bloodshed. It is also remarkable that from so remote and little known a State should have come the first of the many Native rulers who have visited England. The visit had a most beneficial effect in many ways. Jang Bahādur was accompanied by two of his brothers and several of the influential men of the country, who thus had an opportunity of becoming ac-

quainted with the power and resources of the British nation. Evidence of this was forthcoming in the troublous days of 1857, when Jang Bahādur's counsel prevailed against those who would have him join the mutineers, and resulted in an offer of assistance to the British. The offer, though made on the outbreak of the Mutiny, was not accepted until after Delhi had been taken and Lucknow relieved. In July and August 4,000 troops had left Nepāl for the plains, and in December Jang Bahādur himself went down at the head of 8,000 men. They assisted at the recapture of Gorakhpur and Lucknow, and the subsequent operations against rebels who infested the Tarai. The troops employed were paid by the British, and the wounded and relatives of the killed received a liberal donation. Jang Bahādur, who had previously received the title of Mahārājā from his own sovereign, was created a G.C.B.; and under a treaty concluded in 1860, a tract of country at the foot of the hills, on the Oudh frontier, which had been ceded to the British in 1816, was restored to Nepāl. In 1854 a rupture had occurred between the Nepālese and Tibetan governments. After short hostilities and protracted negotiations, a treaty was concluded by which the Tibetans bound themselves to pay an annual tribute of Rs. 10,000 to Nepāl, to encourage trade between the two countries, and to receive a representative of Nepāl at Lhāsa. Jang Bahādur died, at the age of about sixty, in 1877. Three years earlier he had been made a G.C.S.I., and had been granted a personal salute of 19 guns. Previous to his death he had arranged that the office of Minister should pass to his eldest surviving brother Ranudīp Singh, and thereafter from brother to brother till the death of the last, when it should revert to his own eldest son, Jagat Jang.

In 1881 the present king of Nepāl, Mahārāj Dhirāj Prithwī Bīr Bikram Sah, then a child of six, succeeded his grandfather, Surendra Bikram Sah. A conspiracy against the Minister Ranudīp Singh, and the Commander-in-Chief, his brother Dhīr Shamsher, was detected in January, 1882. Jagat Jang was suspected of complicity and exiled, but was permitted to return in 1885. This was considered inimical to their interests by the sons of Dhīr Shamsher, who had died in 1884. Consequently, in November, 1885, they rose against Ranudīp Singh and, having put him to death, seized all power in the State in the name of the sovereign. Jagat Jang and his eldest son were at the same time killed. Bīr Shamsher, the eldest son of Dhīr Shamsher, assumed the post of Minister, and under his rule the country enjoyed peace and progressive prosperity. He introduced a supply of pipe-water into the towns of Kātmāndu and Bhātgaon, inaugurated a drainage system on a large scale, and built hospitals and schools. For himself he erected a magnificent palace modelled on the lines of Government House, Calcutta. The love of building was one of his

most marked traits, and his example was followed by his brothers and the leading men of the State. With the British Government he throughout continued to maintain friendly relations, and was conciliatory and helpful in minor matters, such as boundary disputes and dacoity questions, besides affording increased facilities for the recruiting of Gurkhas for the British service. He died in March, 1901, genuinely regretted by his countrymen, to whom he had always been liberal, moderate, and just.

On Bīr Shamsher's death his brother Deb Shamsher succeeded without opposition to the office of Minister, but within three months he was deposed by his next brother, Chandra Shamsher, who is still Minister (1908). In January, 1903, Chandra Shamsher, with one of his brothers and some of the leading men in Nepāl, attended the Coronation Darbār at Delhi as the guests of the Government of India. With the present Minister at the head of affairs, there is no reason to fear that the relations between Nepāl and the British Government will be of a less friendly nature than heretofore. Mahārājā Chandra Shamsher is an able and shrewd man, with an intimate knowledge of English. Fully impressed with the advantages which might accrue to Nepāl from the introduction of the arts and sciences of Western civilization, he yet clings to the traditions of his countrymen, whose jealousy of their independence dictates the policy of isolation which has been systematically carried on for the last hundred years.

The political status of Nepāl is somewhat difficult to define. It may be said to stand intermediate between Afghānistān and the Native States of India. The point of resemblance to Afghānistān is in the complete freedom which Nepāl enjoys in the management of its internal affairs, while in both countries foreign relations are controlled by the Indian Government. The analogy to the Native States is that, by treaty, Nepāl is obliged to receive a British Resident at Kātmāndu, and cannot take Europeans into service without the sanction of the Indian Government. But, for the reasons above given, the functions of the Resident differ from those that are commonly exercised by Residents at Native courts.

Nepāl is also brought into relations with China, whose nominal suzerainty she acknowledges. It is an influence that weighs light, and consists in the dispatch, every five years, of a mission with presents to the ruling Emperor. This mission, though it may at one time have carried a certain amount of political significance, has now mainly a trading aspect. Its expenses are paid by the Chinese from the time it crosses the Nepālese frontier, and a brisk trade is carried on throughout the journey.

From the foregoing account of the history of Nepāl it will be seen that the government of the country has generally been in the hands of

the Minister of the day. Since the time of Jang Bahādur this system of government has been clearly laid down and defined. The sovereign, or Mahārāj Dhirāj as he is called, is but a dignified figure-head, whose position can best be likened to that of the Mikado during the Shogunate. The real ruler of the country is the Minister, who, while enjoying complete monopoly of power, couples with his official rank the exalted title of Mahārājā. Next to him comes the Commander-in-Chief, who ordinarily succeeds to the office of Minister.

To archaeologists Nepāl has of late become a country of the deepest interest. Working on the detailed accounts of their pilgrimages which the Chinese pilgrims Fa Hian (A.D. 400–14) and Hiuen Tsiang (A.D. 629–45) have left behind them, important Buddhist discoveries have been made within the last few years. The site of KAPILAVASTU has now been fixed within a few miles of Paderia in the western Tarai. This was the ancient capital of the Sākyas, from whose royal house Gautama Buddha was descended, and he was born in the Lumbini grove close by. Many of the sites connected with scenes of Buddha's life have been identified by the remains of Asoka pillars bearing various inscriptions. They also mark the stages of Asoka's pilgrimages (257–244 B.C.). Excavations, up to the present, have not been made on an extensive scale. The work, which can only be carried on during the cold season, has hitherto been undertaken by the Nepāl Government, under the superintendence of European archaeologists. Authorities differ as to when and how Buddhism penetrated into the Valley of Nepāl. Some say that it was a flourishing religion in 300 B.C., while others give the first century of our era as the probable date of its introduction. Innumerable Buddhist *stūpas* and shrines are scattered throughout the valley. Of these the two most renowned are those of Sambhunāth and Budnāth, within a few miles of Kātmāndu. The exact dates of erection of these temples are not known; probably some of the smaller and less important *stūpas* are of greater antiquity.

The most striking feature of the architecture of Nepāl is its Chinese character. It is in every way different from that of India, in a great measure owing to the absence of Muhammadan influence on the arts and religion of the country. Nepāl has been called 'the land of good houses,' and deservedly so. There is abundant evidence that under the Newārs the art of building reached a high stage of perfection, while the profusion of ornamentation in wood- and metal-work attests the liberal encouragement that those arts received. In the building of temples and houses the chief material used is bricks: these are of an excellent quality, of a rose-red colour, and faced with glaze the art of making which is said to have been lost. The temples, of which there are an endless number, are pagoda-shaped, with roofs varying in number from one to five. These are pent-tiled and, in the case of the more

important temples, covered with copper-gilt or brass sheeting. A wealth of wood-carving ornaments the buildings and the eaves of the roofs, mostly taking the form of projecting latticed windows and doorways. In design many of the patterns are exceedingly intricate and beautiful, while others are of a grotesque or obscene nature. Facing many of the temples and palaces are monolithic pillars, crowned with the effigy in copper-gilt of one of the Rājās or of a winged Garuda. As regards the antiquity of the buildings in the Valley of Nepāl, it is doubtful if any of them, with the exception of the *stūpas*, date back to a period prior to the fourteenth century. Most of them were probably erected between 1600 and 1700. Since the Gurkha conquest there has been little encouragement of the arts indigenous to the country. Many of the temples and palaces have been allowed to fall into disrepair, while the needs of an ever-increasing population have directed the talents of the people into more utilitarian channels.

Population.

In the absence of any statistics, for a census of Nepāl has never been taken, it is possible to give only a rough estimate of the population of the country. In all probability it does not exceed 4,000,000, of whom at least 500,000 are found in the Valley of Nepāl, inhabiting the three main towns and the surrounding villages and hills. This is the most densely populated district in the country, and of late years a marked increase in the number of its inhabitants has been noticed. The Indian Census of 1901 showed nearly a quarter of a million immigrants from Nepāl in British India. The great majority of these are settlers from the Nepāl frontier tracts, and have been replaced there, in equal or greater amount, by emigrants from the British side.

The diseases most prevalent throughout the country are rheumatism, chronic dyspepsia, skin diseases, syphilis, and goître. During the rains malaria and dysentery are common in the low-lying districts and the Tarai. Epidemics of cholera used to be of frequent occurrence in Kātmāndu, but since the introduction of a pure water-supply cholera has almost entirely disappeared. Small-pox is constantly present in the valley, but the ravages caused by this disease are moderating owing to the spread of vaccination. The plague epidemic from which India has suffered so much of late years has not yet made its appearance in Nepāl.

The marriage tie is by no means so binding among the Newārs as among the Gurkhas. Every Newār girl when a child is married to a 'bael fruit,' which, after the ceremony, is thrown into some sacred river. On her attaining the age of puberty a husband is selected for her. She is, however, at liberty to claim a divorce if the marriage prove uncongenial; the only intimation necessary before she leaves the house is that she should place two betel-nuts in her bed. She is then

free to choose another husband. At the same time, provided she cohabits only with men of her own or a higher caste, she can, whenever she pleases, return to the house of her first husband and resume charge of his family. The Gurkhas punish breaches of conjugal fidelity most severely. An erring wife is imprisoned for life, and the dishonoured husband is expected to cut down the seducer with his *kukri* the first time he encounters him. Polygamy is not uncommon, and some of the wealthy men have many wives. A widow cannot marry again, but it is not considered disgraceful for her to form part of another man's household.

The great aboriginal stock of Nepāl is Mongolian. The following are the main tribes or castes into which the people may conveniently be grouped.

The Khas, Magars, Gurungs, and Thākurs are the military tribes of the kingdom, from whom the fighting element of the army is drawn. They are the descendants of aboriginal tribes who intermarried with Rājputs and other Hindus, refugees in the hills of Nepāl from Muhammadan invasion in the twelfth century. Since the Gurkha conquest, they have spread throughout the whole country, though their real habitat is to the west of the Valley of Nepāl. It is to these tribes that the often misapplied term 'Gurkha' or 'Gurkhalī' should be confined. The Newārs inhabit the Valley of Nepāl, of which they are the oldest known inhabitants, and constitute the largest section of the population. They are good agriculturists, keen traders, and skilled workers in wood and metal. Then come a number of other tribes of Tibetan stock, known by the generic name of Bhotiā: namely, the Kirāntis, who inhabit the wilder valleys of Eastern Nepāl, and are more purely Mongoloid and less civilized than the Newārs; the Murmīs; and the Limbūs, who are found in the eastern hills adjoining Sikkim and Darjeeling. The Lepchās also inhabit this tract. The Thārus and Boksās are distinct from the dominant Tartar breeds of the mountains, and more akin to the aboriginal tribes of India. They inhabit the Tarai and the low-lying valleys which open into it.

The Gurkhas as a class have marked Mongolian features; they are of low stature, with good muscular chest and limb development, fair complexions, with little or no hair on face or body. The Newārs, while also possessing Mongolian features, differ from the Gurkhas in being taller, slimmer, and more sallow in complexion.

The languages spoken in Nepāl belong to the Tibeto-Himālayan branch of the Tibeto-Burman family, and are described as follows by Dr. Grierson in the *India Census Report* for 1901 (paragraph 400):—

'Kāmi and Bhrāmū are two dialects of Western Nepāl. . . . Except for vocabularies by Hodgson, nothing is known about them. Padhī, Pahrī, or Pahī has its home in the hills of Central Nepāl. Hāyu or

Vāyu is spoken by a tribe inhabiting the basin of the Kosi, east of Nepāl proper, and has been fully described by Hodgson. The Kiranti group of languages was also first brought to light by that eminent scholar. Under that name he included no less than sixteen different forms of speech. According to native authorities, the name is at the present day, strictly speaking, applied to the languages spoken by the . . . Jimdārs and Yākhās who inhabit the portion of the present kingdom of Nepāl which lies between the Tāmbor river on the east and the Dūd Kosi on the west. . . . "Gurung and Mangar [Magar]," says Mr. E. A. Gait, "are spoken by the well-known tribes of the same names who form the backbone of our Gurkha regiments. They and the Sunuwārs have their home in the basin of the Gandak, to the north-west of Nepāl proper; but they have spread eastwards and are now to be found all over Nepāl, and even in Darjeeling and Sikkim. The Gurungs, who in Western Nepāl are Buddhists, following the Lāmas of Tibet, show more marked affinities to Tibetan in their vocabulary than do most of the other Nepāl tribes. They are now . . . giving up their tribal language in favour of Khas. . . . The Mangars are much more faithful to their mother tongue. . . . The Sunuwārs and Thāmis have also, as a rule, preserved their own language. Thāmi is sometimes supposed to be identical with Sunuwār, but this is a mistake." Newārī was the ancient state language of Nepāl before the overthrow of the Newār dynasty in 1769. . . . It is the vernacular of Central and Eastern Nepāl. Hodgson is the only English authority who has given it any study, but it has received considerable attention from scholars in Germany and Russia, who have published a grammar and a dictionary. The Murmīs of Eastern Nepāl are also known as Tamāng Bhotiās, . . . and are said by tradition to have immigrated from Tibet. For this reason their language has often been classed as one of the forms of Bhotiā, but, according to Mr. Gait, without valid reason. Its vocabulary much more closely resembles Gurung than it does Tibetan. Mānjhī is said to be the name of two fishing tribes of Nepāl. . . . The Limbū country proper, or Limbūan, is in Nepāl, east of the Kirānti tract, and south-east of the Khambu one. . . . According to Hodgson, it is difficult to assign their language to any known origin. They are said to have a written character of their own. Nearly all these languages of Nepāl are, so far as British territory is concerned, either found in Darjeeling and its neighbourhood, or are the vernaculars of members of our Gurkha regiments.'

The *lingua franca* of Nepāl is Parbatya ('hill speech'), a language which resembles Hindī and is written in the Nāgari character. It forms the medium of communication between the tribes who speak the various tongues above mentioned, and is classified by Dr. Grierson as Eastern Pahārī. A kindred language, Central Pahārī, is spoken in Western Nepāl, where the local dialect is known as Palpā, from the town of that name.

The religion of the ruling dynasty of Nepāl, as of the majority of the Gurkhas, Thārus, and Boksas, and of a portion of the Newārs, is Hinduism; the other tribes profess Buddhism, and at the present day


NEPAL & PART OF TIBET
Scale = 1: 4,000,000 or 63·1 Miles to an Inch
English Miles
0 20 40 60 80 100
Railways opened and in construction
Canals
86
88
32
30
28
T I B E T
U T S A N G
N E P A L
S I K K I M
T A R A I
Thok Daurakpa
Chu Tan Tsangpo
Bog Chang Tsangpo
Lhung Nak
Ragu
Gipu Kara
Tang Jung Cho
Tang Jung
Zita
Chargat Cho
Ratha
Lamakarmo
Tobarag
Sitong
Zilling Cho
Kazunak
Ombo
Tede Nam Cho
Dangra Yum Cho
Ngangon Cho
Chaksa Zinga
Nganzi L.
Kya Kya Rofka
Dhonak Darkar
Kyaring Cho
Mokieu Cho
Daru Cho
Senja Jong
Doba Tsangpo
Siro Cho
Sasik Gomba
Dobo Doba Cho
Mun Cho Lakes
Dumphu or Hota Tsangpo
Charta Tsangpo
Namling Jong
Orog
Shang Chu
Hurkiang Pk
Sang Sang Giado
Gurla P.
Raka Tsangpo
Puncholing
Thubden
Sarka
Raka Thazung
Sang Sang Kal
Chola
Chomukulo
Tashi Kang
Shigatze
Gela Pk
Nabringkaka
Janglache
Brahmaputra or Maghang Tsangpo
Harm
Jongka Jong
Kyungku
Chong La
Rhe Chu
Sai-jong
Sakya
Lungola P.
Gunjo
Digur
Makpata
Chong Jong
Shikar Jong
Dingri
Sangda
Phung Jong
Dingri Chu
Memung
Thung La
Dob tha Jong
Kirong
Gosai Than 26,305
Tso motel tung
Khamba Jong
Dayabang
Tinki Jong
Raswagarha
Nilam Jong or Kuti
Gaurisankar or Mt Everest 29,002
Nila La
Taya
Chomiomo 22,385
Serpubu La
Rancha
Tashirak
Dongkya Mt
Langa
Hatia
Lamteng
Lachung
Saksila
Walhungsumgola
Kinchinjunga 27,815
Bhatgaon
Patan
Lobang
Toplzia
Tumlong
Chola P.
Chumbi
Dumja
Jubang
Arun R.
Harriharpur
Tamlingtar
Taplang Jong
Jelap la P.
Kanaja
Besari
Phalut Pk 12,042
Gangtok
Palanga
Sindhulia
Amati
Chainpur
Sandakphu Pk
Darjeeling
Churia
Labsi Ghat
Sun Kosi
Tamru R.
Dharampur
Dhankuta
Ilam
Ghati Hills
Birhampur
Chatria
Bijapur
Janakpur
Bairagnia
Megzin
Tista R.
Motihari
Sitamarhi
Jaynagar
Jalpaiguri
Titaliya
Kamla R.
Madhubani
Narsigar
Kankai R.
Forbesganj
Burhi Gandak R.
Darbhanga
Madhepur
Araria
Kishanganj

the two religions are found flourishing side by side and in about equal strength. It has been said that Hinduism is gradually displacing Buddhism throughout Nepāl; but of this there is little evidence. The Buddhists enjoy complete religious liberty, and are a flourishing, contented community. Legend states that when Gautama Buddha visited Nepāl he found that the fundamental principles of his religion had already been introduced among the Newārs by Manjūsri, from China. Be this as it may, the inhabitants readily adopted Buddhism, which has since remained the religion of a large proportion of the population. It is, however, a debased form of the religion that is followed, for it has been modified by the adoption or retention of many Hindu doctrines and practices. In fact, Hindus and Buddhists may often be seen worshipping at the same shrine.

'It is to the indefatigable researches of Brian Hodgson that we owe the discovery of Buddhism as a living religion in Nepāl. While Resident at Kātmāndu he investigated the subject closely, and the results are embodied in a most interesting paper in the second volume of the *Transactions of the Royal Asiatic Society*. He showed how the philosophic agnosticism of Buddha gave way to the theory that the Adi Buddha, by his union with the primordial female energy called Prajna, gave birth to five Buddhas, who each produced from himself by *dhyāna* (meditation) another being called his Bodhi-satwa or son. The chief of these latter was Avalokita, who, with his Sakti, Tārā, eventually became the key-stone of Northern Buddhism. There arose also numerous other Buddhas, demons, and deities, all of which were objects of worship; and then came the introduction of the Tantrik mysticism, based on the pantheistic idea of *Yoga*, or the ecstatic union of the soul with the supreme spirit. At this stage, as in Tantrik Hinduism, the Saktis, or female counterparts of the Bodhi-satwas, occupied the most prominent position, and the esoteric cult of these female deities became every whit as obscene as that practised by the Kaula or extreme sect of Sākta Hindus. It was this form of Buddhism which was introduced into Tibet, where it became even more debased by the incorporation of the demon-worship which preceded it, as has been ably described by Colonel Waddell[1].' (*India Census Report*, 1901, paragraph 648.)

The largest community of Buddhists is found among the Newārs, of whom at least two-thirds profess themselves such, while the remainder are Hindus. The other Buddhist tribes are the Bhotiās, Limbūs, and Lepchās. Though there are different sects among them, their religious customs and ceremonies are much alike. In their worship they make great use of offerings of flowers and fruit, and also of sacrifices of buffaloes, goats, and cocks. The blood of the victims is sprinkled on the shrine, and the flesh is consumed by the worshippers. The system of *vihāras* or monasteries, so conspicuous a religious feature in Tibet, once flourished in Nepāl; but since the Gurkha conquest it has com-

[1] *The Buddhism of Tibet, or Lāmaism.*

pletely disappeared, and there are now no Buddhist monks in the country. In principle, religious customs and caste rules among the Hindus are the same as in India; but in reality they are far less strict, at least within the confines of their own country.

The Newārs and Gurkhas are exceedingly superstitious, the most ordinary occurrences of everyday life being imputed by them to supernatural agency. In consequence, the astrologers form a large class of the community and are consulted on all points.

Both Buddhists and Hindus burn their dead.

Prior to the Gurkha invasion, a Roman Catholic mission had been long established in the Valley of Nepāl, where it had secured many converts and received grants of land from the Newār monarchs. In 1769, when Prithwī Nārāyan made himself master of the valley, permission was granted to the Christians to retire into British territory, and most of the converts settled at Bettiah. Their church at Pātan was in existence up to 1802, but at the present day all traces of the mission have been lost. The Gurkha government, though very tolerant as regards the religious observances of its Buddhist subjects and of such Muhammadan traders as have settled in the country, is strongly opposed to the establishment of any Christian mission. According to a popular saying among the Gurkhas—'With the Bible comes the bayonet; with the merchant comes the musket.'

The higher Hindu castes live in the same way as their brethren of India, but most of the population consume a great deal more flesh than the natives of the plains of Hindustān. The Gurkhas eat the flesh of goats, sheep, and ducks, to which the higher classes add deer, wild boar, and pheasants. The sheep used as food are all imported from the hills to the north, sheep from the plains of India being rejected because they have long tails. The Newārs are great consumers of buffaloes, goats, sheep, fowls, and ducks. It is not often, however, that the poorer classes can indulge in flesh; and the greater part of their food consists of rice, maize, potatoes, and vegetables, which are generally plentiful throughout the year. Garlic and red pepper are especial favourites. The Newārs, and most of the lower Hindu castes, consume a considerable quantity of a coarse kind of beer called *juar* and a spirit called *rakshi.* These are manufactured from rice and wheat.

In summer the Gurkhas wear *paijāmas,* and a jacket or long tunic of white or blue cotton with a voluminous cummerbund, in which is invariably fastened a *kukri* or large curved knife. In winter they wear similar clothes padded with cotton. The head-dress is generally a small skull-cap, though they often wear a loosely folded *pagrī.*

The poorer classes of the Newārs wear in general little but a waist cloth, and a long jacket of coarse cotton or woollen cloth, according

to the season. Sometimes the dress of the men consists of a long robe like a woman's gown, reaching to the ankles and gathered into numerous pleats from the waist. The head-dress of the Newārs is a small, close-fitting cap of black or white cloth, thinly wadded with cotton and generally turned up for an inch or so at the border. The women of all the races dress much alike, wearing by way of petticoat a cloth gathered into a mass of pleats and almost touching the ground in front, but barely coming below the knees behind. Besides this, they wear a small jacket and a *sārī*, which is generally wrapped round the body like a broad cummerbund.

The women of the upper classes wear a very distinctive and picturesque dress. It consists of very voluminous *paijāmas*, tight-fitting above the ankles. Over this is worn a false skirt made of thin coloured muslin or tulle, as many as 80 yards of material being employed. The jackets are tight-fitting, while across the shoulders is thrown a wisp of muslin. Every shade of colour, from the most vivid to the most delicate, is utilized, thus greatly adding to the picturesqueness of the dress. Head-dress they have none; but the Newār women may be distinguished from the other races by having their hair gathered into a short thick club on the crown of the head, whereas the Gurkha women have it plaited into a long tail, ornamented at the end with red cotton or silk. All the women wear a profusion of ornaments; and both men and women are very fond of flowers, which they make great use of in adorning their hair.

The dwelling-houses are mostly of brick, two or three storeys in height, built round a central courtyard.

Gurkhas delight in all manly sports, such as shooting and fishing. Their great vice is gambling, to which they are greatly addicted. This is allowed only for a limited number of days at certain festivals, when the whole population engage in it, and groups of gamblers, all busily occupied, day and night, in dice-throwing, render the streets impassable.

As the shrines of Nepāl are estimated at over 2,700, the religious festivals are naturally numerous. The most important of them are the Machendrā Jātra, Indrā Jātra, Dasahra, Dewāli, and Holī. Though these are primarily Hindu festivals, the Buddhist population participate in them freely.

Agriculture.

The soil of the Valley of Nepāl, consisting of the débris washed down from the surrounding hills, may be divided into two classes, the clayey and the sandy. Between the extremes of a dense unproductive clay and a mere bed of micaceous sand, every variety of mixture is found. The soil is remarkable for the absence of any kind of rock formation: even pebbles are hardly ever seen on the surface. Almost every available portion of

land in the valley is under cultivation. The Newārs, who are the principal agriculturists, employ very primitive tools. For digging they use a *kodāli* or peculiar-shaped hoe. With this they turn up the soil into ridges, about 1½ feet broad and 8 inches high. After the ground has been exposed to the air for a longer or shorter period, it is broken up by means of a mallet, shaped somewhat like a heavy wooden rake without the teeth. The only other tools employed are small instruments for weeding, a small hook for reaping, and wooden shovels for turning over the crop when drying.

The work of cultivation is done almost entirely by hand, and the soil being by no means rich, it is necessary to manure the ground. The manure chiefly used consists of a dark unctuous-looking clay, very tenacious and firm. It is generally found in layers of from 2 to 20 feet in thickness at various depths below the surface. This clay is dug out in the cold season and allowed to dry in heaps on the sides of the fields till the time for sowing, when it is spread over the fields and broken up into a fine powder with the mallet. It appears to consist of silica and alumina in a very fine state of division, and shows no trace of calcareous or vegetable matter. The fields are in general small, partly on account of the number of landowners, but also because irrigation is thus rendered easier. For this reason, too, whenever the soil is not naturally on a dead level it is formed into terraces. As the whole Valley slopes generally from the hills towards the centre, irrigation is as a rule easily effected by means of small ditches or canals. Around each field is a narrow raised ledge, to retain the water while the rice crop is growing. The rotation of crops varies in the different classes of ground. In the marshy lands near the rivers only one crop is grown, namely, transplanted rice. In less easily flooded lands a crop of wheat is grown in the cold season, and in the next spring *gyah* or upland rice, followed by *urd* or some other kind of pulse. In the moister lands of the upper level the wheat is followed by radishes, mustard, or buckwheat, and these again by transplanted rice. In the best lands the succession of crops is simply transplanted rice followed by wheat, or by mustard, radishes, or garlic. Sometimes, in the 'dry' lands, wheat is followed by maize, or ginger, turmeric, and red pepper are grown.

Rice is the most common crop. There are several varieties, but they may be divided into the transplanted and the *gyah*. The former is sown in May, is transplanted as soon as the rains have fairly set in, i.e. early in July, and is reaped in November. The *gyah* rice is sown in lands of higher level during the latter half of April, and is ready for cutting by the end of August or beginning of September. The average yield of transplanted rice is 40 bushels, and of *gyah* 25 bushels, per acre.

Wheat is largely grown in Nepāl, but does not form a favourite

article of food with the people, and little attention is bestowed on its cultivation. It is generally used in the manufacture of coarse beer and spirit, which are largely consumed by the Newārs and Bhotiās. After the rice crop is off the ground in December, the wheat is sown broadcast, and no further care is taken of it. The crop ripens by the middle of May, and the yield is about 14 bushels per acre.

Barley and oats are grown in small quantities, and only in the valley. The latter crop seems to thrive remarkably well, but it is used only for feeding horses. Maize, or *makai*, is much cultivated on the higher grounds of the valley, and on the hills, where it grows luxuriantly though hardly any care is bestowed upon it. In the valley it is carefully hoed, weeded, and manured. It is sown in the end of May and ripens about the beginning of September. The average yield is 15 bushels per acre. *Marūa* is a small millet-like grain, largely grown on the hills and on the sides of the ravines in the valley. It is sown in May or June, and reaped in October or November. It does not require irrigation, and little trouble is taken with it. The average yield is about 15 bushels per acre. Capsicums and red peppers of every variety are much cultivated, and Nepāl pepper is famous for its peculiarly delicate flavour. Potatoes are grown both in the valley and on the adjacent hills. They are planted in January and February, and are dug in May and June. Buckwheat, mustard, garlic, radishes of a large white kind, sugar-cane, ginger, and turmeric are also grown in varying quantities.

Famine is unknown and scarcity infrequent: if it is threatened, the government prohibits the export of grain.

All kinds of European vegetables can be grown in the Valley of Nepāl, which also produces strawberries, pears, quinces, plums, apples, apricots, peaches, and a few grapes. Oranges and lemons grow most luxuriantly and are of very fine flavour. In the adjacent small hot valleys all the fruits of the plains of India grow freely.

There are few cattle in the valley, as there is no grazing ground except at the foot of the hills. Buffaloes, sheep, and goats for food are all imported. Ducks and fowls are plentiful and of good quality. Considerable care is bestowed on the rearing of ducks, their eggs being greatly prized as an article of food. They are carried out daily to the rice-fields in large baskets and allowed to feed there, and in the evening are collected and carried home again.

The Tarai varies considerably in its produce according to the nature of the soil and the amount of cleared lands. The chief products are rice, wheat, and sugar-cane. The soil is a rich alluvium and is well adapted for every kind of crop, including poppy and tobacco. From the Tarai is derived the greater part of the revenue of the country, and much grain is annually exported to British territory. Large herds

of cattle are also found in the Tarai, owing to the very superior grazing it affords.

Most of the land is held on a simple *ryotwāri* tenure. The rent paid by the cultivator, whether to the State or to a private landlord, varies according to the value of the crop and the situation of the land. Throughout the valley and the Tarai it is roughly calculated at half the value of the crops, and is sometimes paid in cash and sometimes in kind. In the hills the cultivator pays 13 annas a year for as much land as can be cultivated by a pair of bullocks, for the land ploughed by one bullock 6½ annas, and for as much as can be tilled with a hoe 4 annas. The people throughout the country are prosperous and contented, the government being lenient in granting remissions during times of scarcity.

Forests.

The forests of Nepāl may be classified, according to the region they occupy, as Tarai, Submontane, and Hill forests. Those of the Tarai stand on the shallower and later alluvial deposits, which consist of low-lying lands bearing the impress of the recent action of flood-water. In the sequence of swamps which are a marked feature of this grass-clad country the former courses of rivers now running in other channels may readily be traced, and in the dry watercourses, lined with boulders and gravel, recent changes in the waterways are evident. In these gently sloping or level areas the most insignificant obstacle—a stranded log, a landslip from the sandy banks—may divert the torrents that burst from the hills during the period of monsoon precipitation or melting snow. Of what was yesterday a forest spreading evenly over the plain there may remain on the morrow only picturesque groups of islands, the shallow soil originally swept from the hills having as suddenly passed away, ultimately no doubt to the benefit of the dwellers on the lower courses of the large Indian rivers. On these islands, and along the low banks of the shifting water-channels, forests of *shīsham* (*Dalbergia Sissoo*) and *khair* (*Acacia Catechu*) grow with exceeding rapidity. In such localities the younger classes are represented in densely growing masses, and forests are yearly created from water-borne seed deposited by the subsiding floods. On the higher and more stable ground older specimens of these valuable trees are found, mature and isolated, surrounded by high grasses or by thickets of softer wood. These latter, once established, may, by the gradual raising of the soil and by the stability afforded by their interlacing roots, withstand the influence of all but the highest floods, and so gradually join hands with the Submontane forests which, though bearing a distinctive vegetation, stretch out from the hills long arms into the Tarai formation.

The Submontane forests are found in the older and more stable alluvium, and in the broken ground formed by the gradual but con-

tinuous crumbling of the loftier hills. Here flourish the valuable hard woods of *sāl* (*Shorea robusta*) and *asaina* (*Terminalia tomentosa*), besides various other species, such as *Cedrela*, *Adina*, *Schleichera*, and *Eugenia*, which yield timber or other products of economic value. Here, too, in the foothills of the Himālayas, the well-known *bābar* grass is found in large quantities, being used locally for fodder and for rope-making and exported for the manufacture of paper, while the bamboo affords fodder for the herds of wild elephants which frequent these regions.

Of the Hill forests little is known save that, where not denuded by irresponsible cultivation, they contain many species which must be invaluable to the inhabitants and would, if exported to the south, command a ready sale. At least three kinds of pine, the Himālayan spruce, two kinds of fir, and the *deodār* cedar have been reported from these areas, while yew, cypress, and pencil cedar appear to be not uncommon. Four or five kinds of oak are also noted, and in the lower hills the *champa* (*Michelia Champaca*) is frequent. The vegetation of the Hill forests of Nepāl may be taken to approximate to that existing in similar conditions of climate and elevation in British India, but a detailed investigation of the forests would doubtless afford information of the highest botanical and sylvicultural interest.

The forests of Nepāl are the property of the State, and a Forest department, whose officials appear to enjoy military rank, has been constituted. The collection of revenue seems to form the chief part of the duties of the staff, though no doubt the protection and improvement of the forests receive some attention in restricted and accessible areas. On the whole it may be said that the forests are neglected and undeveloped, and that this is due to the lack of organization and supervision. The timber trade from Nepāl is reported to be decreasing, in spite of the fact that the railways of India now touch the frontier at several places, and of the European supervision employed in saw-mills erected at convenient centres. The timber extracted from the forests is carried by carts to the nearest flowing stream or rail head. The work devolves on the purchasers, who complain of the cupidity of the lower officials, asserting that, though royalty rates are low, the uncertainty with regard to incidental charges renders the timber trade with Nepāl more speculative than a merchant of moderate means can afford to enter upon. The timber extracted is, however, of excellent quality, and the thousands of poles which are removed from new clearances for cultivation find a ready sale in British India.

In regard to minor forest produce much might be done to increase the export trade—that in *bābar* grass has been fostered by the State, baling presses having been erected at many places along the frontier—but the harassing export duties appear largely to stifle the collection

of jungle products which should in more favourable circumstances employ the frequent leisure enjoyed by the dwellers in forest regions. Cinnamon, pepper from the hill clearings, and *ban charas* from the wild hemp may be found in quantities in any of the frontier bazars, which also contain stores of wax, honey, and other forest products.

Of the people inhabiting the Tarai and part of the Submontane forests, the Thārus are the most interesting. In the neighbouring forests of British India this race has come under the influence of the West and is losing its individuality. In Nepāl, however, the roving spirit survives, and shifting cultivation is still practised. The Forest officer, in his friendly intercourse with the Thārus, will be reminded of other primitive jungle people, such as the Kāchins of North-Eastern Burma. Both tribes make their dwellings in large houses common to the community, and resemble one another in their diet of game, fish, and rice, and in the propitiation of demons by the sacrifice of fowls and other animals. The resemblance extends also to the type of feature, which is distinctly Mongolian, to the custom of tattooing the lower limbs, and even to the mode of attire and adornment. The Thāru is an inveterate hunter, but also displays great ability as a cultivator, especially in irrigation.

The more settled portion of the Nepāl Tarai is sparsely cultivated, chiefly by immigrants from British India, and its vast grazing grounds maintain large herds of cattle utilized for breeding purposes or for the manufacture of *ghī*. They provide also, especially in times of famine, grazing for the herds from over the border, thus relieving the strain on the 'reserved' forests of British India which are situated in the vicinity. It may be imagined that a population whose customs and interests are so inimical to the continuance of forest growth must, in the absence of efficient control, slowly yet effectually succeed in diminishing the forest wealth which is at the disposal of the Nepāl State. When the attention of the rulers of that country has been directed to the waste of material that is now proceeding, remedial action will no doubt be taken, to the benefit of the country and of its finances.

The mineral wealth of Nepāl has always been supposed to be great. But this, like other sources of revenue, has never been developed. The absence of coal, the situation of the minerals, and the lack of roads and cheap transit are largely responsible for this want of enterprise. Copper is found quite near the surface of the earth, the ore being dug from open trenches. Iron ore and sulphur are also obtained in large quantities.

The manufactures of the country are few, consisting chiefly of coarse cotton cloth which the women of the household weave for domestic use. The Bhotiās weave woollen blankets. A stout kind

of paper is manufactured from the inner bark of several species of *Daphne*. All the mechanics of the country are Newārs, who are skilful workers in gold, silver, and brass, as also good carpenters and wood-carvers. In olden days they were celebrated for their artistic productions in brassware, and the delicacy and variety of their wood-carving; but since the Gurkha conquest these industries have been allowed to languish.

Trade and communications.

The external trade of Nepāl falls under two heads—that which is carried on across the Himālayas with Tibet, and that conducted along the extensive line of the British frontier. Of the extent of the former trade, very little is known; and since the opening of the Darjeeling route it has considerably diminished, although it still yields the Nepālese government a revenue of 2½ to 3 lakhs of rupees annually. The chief route, north-east from Kātmāndu following up a tributary of the Kosi, passes the trans-frontier station of Kūti at an elevation of about 14,000 feet above sea-level; another route, also starting from Kātmāndu, follows the main eastern stream of the Gandak, crosses the frontier near the station of Kirang (9,000 feet), and ultimately reaches the Tsan-po river at Tadam. Both these routes are extremely difficult. The only beasts of burden available are sheep and goats, and practically everything but grain and salt is carried by men and women. The principal imports from Tibet are *pashmīna* or shawl wool, coarse woollen cloth, salt, borax, musk, yak tails, yellow arsenic, quicksilver, gold dust, antimony, *manjīt* or madder, *charas* (an intoxicating preparation of hemp), various medicinal drugs, and dried fruits. The exports into Tibet include utensils of copper, bell-metal, and iron, manufactured by the Newārs; European piece-goods and hardware; Indian cotton-goods, spices, tobacco, coco-nuts, and betel-leaf.

The trade with British India is conducted at various centres along the frontier, of which the chief are Bīrganj, Nepālganj, Butwāl, Hanumānnagar, and Dhulabāri. The principal route for through traffic is that direct to Kātmāndu from British territory. Starting at the terminus of the railway on the Nepālese frontier, this route passes through Bīrganj, Hataura, Bhīmjedi, and Thānkot, the total length being about 76 miles. Carts can be taken as far as Bhīmjedi, except during the rainy season; beyond that coolies, mostly Bhotiās and Newārs, are the only means of carriage available. The Bhotiās carry enormous loads. It is by no means uncommon for a man to take two maunds, though one maund (82 lb.) is the regular load, and this has to be carried over hills several thousand feet in height where the paths are of the most primitive construction. The Bhotiās always carry loads on their backs supported by a strap

across the forehead, whereas the Newārs invariably carry theirs in baskets with a pole balanced on the shoulder. What has been said of the Kātmāndu route applies to other means of communication with Nepāl. There is scarcely a made road in the country, but carts and pack-bullocks from British territory pass freely to and fro during the dry season.

The principal articles of export from Nepāl into British India are rice, husked and unhusked; food-grains; mustard, rape, and other oilseeds; ponies, cattle, sheep, and goats; hides and skins; *ghī* or clarified butter; timber; cardamoms, red pepper, turmeric, and other spices; opium; musk, borax, madder, turpentine, catechu, and chiretta. The chief imports are cotton piece-goods, cotton yarn, woollen cloth, shawls, flannel, silk, salt, spices, sheet copper and other metals, tobacco, petroleum, provisions (including sugar), indigo and other dyes. Of the aggregate value of this trade it is difficult to form an accurate estimate, owing to the many channels by which it passes and the imperfect methods of registration, but the following are figures compiled by the Director-General of Statistics:—

	In lakhs of rupees.		
	1890-1.	1900-1.	1903-4.
Imports from India to Nepāl . . .	1,29	1,63	1,34
Exports from Nepāl to India . . .	1,72	2,36	2,61

Some articles of trade, such as timber, salt, cardamoms, and tobacco, are State monopolies: otherwise trade is free, subject to import and export duties, which are sometimes charged *ad valorem*, but more commonly by load, weight, or number of articles. The chief traders in Nepāl are the Newārs, while many natives of India, both Hindu and Muhammadan, have settled in the country and carry on a brisk commerce.

Communications throughout Nepāl are, as already observed, very primitive. The Nepālese have always set their faces against improvement in this direction, trusting to the natural inaccessibility of the country as the best means of preventing invasion and annexation. In pursuance of this policy they have always kept the country strictly closed to Europeans, the only route open to them being that from Raxaul to Kātmāndu via Hataura. No railway or telegraph system has been introduced into Nepāl, although branches of the Bengal and North-Western Railway touch the frontier at various points, the chief of which are Nepālganj, Raxaul, Bairagniā, and Anchera Ghāt. A good postal service, under the control of the British Postal department, has been in existence for some years between Kātmāndu and the plains of India, and is largely utilized by the Nepālese for the transmission of money and goods, while the Nepāl State has postal services of its own.

As previously mentioned, the government of the country is entirely

in the hands of the Minister, although he is nominally assisted by a council the members of which are selected by himself. All written and verbal communications relative to political, fiscal, and judicial affairs are submitted to the Minister, who generally issues his orders thereon without consulting either the king or the council. No public money is expended without his knowledge and sanction; all appointments, civil or military, are conferred by him; and all complaints regarding the conduct of public officials are brought to his notice and invariably meet with attention.

Administration.

For administrative purposes the country is divided into various districts. The most important of these are Ilam, Dhankuta, Gurkha, Palpā, and Doti in the Hills; and Nayā Mulk, Butwāl, Chitawan, and Murang in the Tarai. There are four governors for the Tarai, and two for the Hills, whose duties resemble more or less those of Commissioners in British India: they have under them various officials, of whom the *Sūbahs* are the most important, each of these being in charge of a district.

There are separate civil and criminal courts, but the distinction is not well marked, as disputed and difficult cases are sometimes transferred from the one to the other. The country is divided into judicial circles, *lamini kacheris*, of which there are sixteen for the Tarai and twenty-four for the Hills: each of these is in charge of a Deputy-Magistrate, called *Bichāri*, while jurisdiction over several districts is exercised by *Dithas* or Magistrates. All cases of serious crime must be submitted for the decision of the higher tribunals at the capital, and a final appeal can be made to the council over which the Minister presides. The old savage code of punishments, involving mutilations, &c., has long since been abolished. Crimes are divided into three classes, according as they affect the state, private persons or property, and caste. Murder and the killing of cows are punishable by death, but Brāhmans and women are never punished capitally. The severest sentence for women is imprisonment for life with hard labour, and for Brāhmans the same, with degradation from caste. There is singularly little crime in the country, for the Nepālese are very law-abiding.

Of the revenue of Nepāl it is impossible to speak with any degree of accuracy, as the finances are entirely controlled by the Minister and his chief treasurer. There can be no doubt, however, that during late years the revenue has considerably increased, and cannot now be far short of 2 crores of rupees per annum. But the sums actually realized at the public treasury cannot be taken as representing the real revenue of the country, since the greater portion of the civil and military establishments are paid by grants of land. The chief sources from which the revenue is obtained are the land revenue, customs dues, mines, forests, and the monopolies above mentioned.

The current silver coin in Nepāl is the *mohar*, two of which go to the Mohri rupee. The intrinsic value of the *mohar* is 6 annas 8 pies of British Indian currency. The Mohri rupee is chiefly used as a matter of account, its minor denominations being as follows:—4 dāms = 1 pice; 4 pice = 1 anna; 16 annas = 1 Mohri rupee.

The copper coins in common use are pice, which are struck at the mint in Kātmāndu. These are circular and fairly well stamped: 117 go to the Indian rupee. In addition, there are the Butwāli or Gorakhpuri, and the Lohiya, pice: these are squarish lumps of purified copper, roughly cut by hand, of which about 75 go to the Indian rupee. In Kātmāndu Indian currency notes are highly prized as a means of remittance, usually fetching a premium varying from 3 to 5 per cent. Indian coinage is accepted throughout the country.

The standing army of Nepāl is estimated at about 45,000 men, including 2,500 artillery. The rest are infantry, composed of regulars and militia, but there is also a large reserve force. The original period of service, which is voluntary, extends to three years, after which the men can either elect to serve on or enter the reserve. The army is chiefly recruited from the Thākurs, Khas, Magars, Gurungs, and Limbūs. The Newārs are not allowed to bear arms, though many are enlisted in the cooly corps attached to each regiment and included among the non-combatants. In times of danger every able-bodied man is liable to be called out for service. The troops are armed with a certain number of Martini-Henry rifles, many of them of local manufacture, but chiefly with old Snider and Enfield rifles. The Commander-in-Chief of the army is always the next eldest brother of the Minister. In the same way the other high posts are filled, not by men who have risen in the army or who are selected for their military knowledge, but by brothers and sons of the Minister, many of whom are mere youths. An arsenal has been constructed a few miles to the east of Kātmāndu, which has largely or entirely supplanted the former arsenal at Nikkoo. Reliable statistics are unobtainable regarding the work carried out in the arsenal, nor is it open to ordinary inspection. But from the size of the buildings, the abundant water-power, and the facilities for importing skilled labour, there is no reason why the manufacture of modern armaments should not be carried on to a considerable degree, although this would of course be regulated by the general understanding existing between the Nepāl State and the Government of India.

The State offers no educational advantages to the masses. Only one school is maintained, which is affiliated to the Calcutta University and exists chiefly for the sons of well-to-do parents. Students are, however, sent by the State from time to time to receive a course of instruction at one of the Engineering colleges in India.

Kātmāndu possesses two hospitals, one for women and one for men, which are under the superintendence of qualified natives of India. Another has recently been opened at Bhātgaon. Vaccination is optional, but is spreading owing to the free supply of lymph and the employment of perambulating vaccinators, and the people are beginning to appreciate its benefits as compared with those of inoculation.

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Ner.—Town in the Morsī *tāluk* of Amraotī District, Berār, situated in 21° 15′ N. and 78° 2′ E. Population (1901), 5,408. On a hill near by is a temple of Pinglai Devī, from which the town is generally known as Ner Pinglai, to distinguish it from Ner Parsopant, in the Dārwhā *tāluk* of Yeotmāl District, formerly a more important place, and mentioned in the *Ain-i-Akbarī* as a *pargana* town.

Nerbudda Division (*Narbadā*).—Western Division of the Central Provinces, lying between 21° 5′ and 23° 15′ N. and 75° 57′ and 79° 38′ E., with an area of 18,382 square miles. It embraces a section of the valley of the Narbadā river, from which the Division takes its name, and some tracts on the Sātpurā plateau to the south of the valley. The head-quarters of the Commissioner are at Hoshangābād Town. The Division includes five Districts, as shown in the table on the next page.

Of these, Narsinghpur, Hoshangābād, and Nimār extend from east to west along the southern bank of the Narbadā river, while Betūl and Chhindwāra lie on the hills to the south of the valley. The population of the Division was 1,763,105 in 1881, from which it increased in 1891 to 1,881,147, or by 6 per cent. This increase was considerably less than the Provincial average, the explanation being that the fertile tracts

of the Narbadā valley were already so closely cultivated as to leave little room for further expansion. During the last decade the population decreased to 1,783,441, or by 5 per cent., as a result of a succession of disastrous failures of crops. Since the Census of 1901 a small transfer of territory has taken place, and the adjusted population in 1904 was 1,785,008. The Nerbudda Division is the smallest in the Province in both area and population. In 1901 Hindus numbered 70 per cent. of the total, and Animists 18 per cent. There were 84,122 Musalmāns, 9,522 Jains, and 5,355 Christians, of whom 70[?] were Europeans or Eurasians. The density of population is 97 persons per square mile, compared with 112 for the British Districts of the Province. The Division contains 17 towns and 6,164 villages. BURHĀNPUR (33,341) is the only town with more than 20,000 inhabitants. On the large block of the Sātpurās, known as the Mahādeo hills, in the south of Hoshangābād District, is situated the sanitarium of PACHMARHĪ, which is the summer head-quarters of the Local Government. The small State of MAKRAI in Hoshangābād is under the supervision of the Commissioner.

District.	Area in square miles.*	Population, 1901.*	Land revenue and cesses, 1903-4, in thousands of rupees.
Narsinghpur	1,976	315,518	6,92
Hoshangābād	3,676	446,585	7,72
Nimār	4,273	329,615	4,61
Betūl	3,826	285,363	2,94
Chhindwāra	4,631	407,927	3,41
Total	18,382	1,785,008	25,60

* The District figures of area and population have been adjusted, to allow for some small transfers of territory which have taken place since the Census of 1901.

Nerbudda.—River in the Central Provinces, Central India, and Bombay. *See* NARBADĀ.

Nerla.—Village in the Vālva *tāluka* of Sātāra District, Bombay, situated in 17° 5′ N. and 74° 16′ E., 44 miles south-by-east of Sātāra town. Population (1901), 7,524.

Netrakonā Subdivision.—North-eastern subdivision of Mymensingh District, Eastern Bengal and Assam, lying between 24° 35′ and 25° 11′ N. and 90° 29′ and 91° 15′ E., with an area of 1,148 square miles. With the exception of a hilly tract in the north-east, where the Durgāpur *thāna* borders on the Gāro Hills, the subdivision is a flat alluvial plain. The population was 574,771 in 1901, compared with 536,568 in 1891. It contains one town, NETRAKONĀ (population 11,402), the head-quarters; and 1,965 villages. The density is 501 persons per square mile, against an average of 618 for the whole District

the most sparsely populated part is the Durgāpur *thāna*, which has only 299 inhabitants per square mile.

Netrakonā Town.—Head-quarters of the subdivision of the same name in Mymensingh District, Eastern Bengal and Assam, situated in 24° 53′ N. and 90° 45′ E. Population (1901), 11,402. Netrakonā was constituted a municipality in 1887. The income during the decade ending 1901–2 averaged Rs. 5,700, and the expenditure Rs. 5,200. In 1903–4 the income was Rs. 9,000, mainly derived from a property tax and a conservancy rate; and the expenditure was Rs. 7,000. The town possesses the usual public buildings; the sub-jail has accommodation for 22 prisoners.

Nevāsa.—*Tāluka* of Ahmadnagar District, Bombay, lying between 19° 14′ and 19° 43′ N. and 74° 41′ and 75° 13′ E., with an area of 621 square miles. It contains 147 villages, including SONAI (population, 5,393). The head-quarters are at Nevāsa. The population in 1901 was 65,503, compared with 88,149 in 1891. The decrease was due to famine and migration to relief works. The people also availed themselves of the demand for labour created by a good harvest in the Nizām's territory. The density, 105 persons per square mile, is much below the District average. The demand for land revenue in 1903–4 was 1·7 lakhs, and for cesses Rs. 14,000. The general character of Nevāsa is a flat plain, sloping gently northwards towards the Godāvari river. In the south and south-east the country has a more decided slope upwards to the Nagar range of hills and is deeply fissured by ravines, down which, during heavy rains, the water rushes with great violence. The drainage is wholly towards the Godāvari, which forms the boundary of the *tāluka* on the north. One village belonging to the Nizām lies south of the river, thus breaking the continuous boundary for 3 miles. The area under *rabi* or late crops is double that under *kharīf* or early crops. The area of irrigated land is small.

New Dihing.—River in Lakhimpur District, Eastern Bengal and Assam. *See* DIHING, NOĀ.

Ngape.—South-western township of Minbu District, Upper Burma, drained by the upper reaches of the Man river, and lying between 19° 50′ and 20° 10′ N. and 94° 17′ and 94° 40′ E., with an area of 362 square miles. The population, which consists largely of Chins, was 13,146 in 1891, and 16,033 in 1901, distributed in 144 villages. Ngape (population, 1,042), a village on the Man river, some 30 miles west of Minbu, is the head-quarters. The township, a large portion of which is covered by the forests of the Arakan Yoma, is sparsely populated, and the cultivable area is small. The area actually cultivated in 1903–4 was only 9 square miles, and the land revenue and *thathameda* amounted to Rs. 33,000.

Ngaputaw.—Southern township of Bassein District, Lower Burma,

lying at the extreme south-west corner of the Irrawaddy delta, between 15° 50′ and 16° 37′ N. and 94° 11′ and 94° 47′ E., with an area of 1,439 square miles. Its southern and western borders skirt the sea, and the uplands of the Arakan Yoma render its western areas useless for cultivation. The population was 29,810 in 1891, and 37,126 in 1901, distributed over 244 villages, the density being only 26 persons per square mile. The head-quarters are at Ngaputaw (population, 1,338), on the eastern bank of the Bassein river, about 16 miles due south of Bassein town. In 1903–4 the area under cultivation was 107 square miles (an increase of over 70 per cent. in ten years), paying a land revenue of Rs. 1,03,000. One of the main industries of the township is the manufacture of salt.

Ngathainggyaung Subdivision.—Northern subdivision of Bassein District, Lower Burma, consisting of the townships of NGATHAINGGYAUNG, KYONPYAW, and KYAUNGGON.

Ngathainggyaung Township (*Yegyi*).—North-western township of the Ngathainggyaung subdivision of Bassein District, Lower Burma, lying between 17° 6′ and 17° 29′ N. and 94° 47′ and 95° 13′ E., with an area of 345 square miles. The population was 56,563 in 1891, and 64,891 in 1901, living in 387 villages and one town, NGATHAINGGYAUNG (population, 7,182), the head-quarters. The township lies along the Bassein river and is fertile, compact, and thickly populated. In 1903–4 the area under cultivation was 136 square miles, paying a land revenue of Rs. 2,29,000, while the total revenue amounted to Rs. 4,38,000.

Ngathainggyaung Town.—Head-quarters of the subdivision of the same name in Bassein District, Lower Burma, situated in 17° 23′ N. and 95° 5′ E., on the left bank of the Bassein river, about 50 miles north-north-east of Bassein town. Population (1901), 7,182. Ngathainggyaung has for some time been a town of importance. It was garrisoned by a native infantry detachment during the second Burmese War, and was seized by the rebels in the disturbances in 1854, but was quickly recaptured by Major Fytche. Combined with Daunggyi on the opposite bank of the river, it was constituted a municipality in 1878, covering an area of about 3 square miles. The municipal income and expenditure during the ten years ending 1901 averaged about Rs. 17,000. In 1903–4 they amounted to Rs. 24,000 and Rs. 19,000 respectively. Of the receipts, Rs. 15,000 was obtained from tolls on markets and slaughter-houses, and Rs. 3,000 from house tax. The chief items of expenditure were conservancy (Rs. 4,000) and roads (Rs. 3,000). The town possesses a civil hospital, with accommodation for 12 in-patients. There is no municipal school, but the committee spent Rs. 1,300 on education in 1903–4.

Ngawun.—River of Lower Burma. *See* BASSEIN RIVER.

Ngazun.—Township of Sagaing District, Upper Burma, lying

between 21° 32′ and 21° 55′ N. and 95° 26′ and 95° 49′ E., along the south bank of the Irrawaddy, with an area of 358 square miles. The population was 44,911 in 1891, and 52,532 in 1901, distributed in 169 villages, the head-quarters being at Ngazun (population, 2,254), on the river bank about 17 miles north of Myotha, the subdivisional head-quarters. The township is rugged and barren except in the neighbourhood of the river, and the rainfall is low. The area cultivated in 1903–4 was 164 square miles, and the land revenue and *thathameda* amounted to Rs. 1,30,700.

Niāmti.—Village in Shimoga District, Mysore. *See* NYĀMTI.

Nichlaul.—Village in the Mahārājganj *tahsīl* of Gorakhpur District, United Provinces, situated in 27° 19′ N. and 83° 44′ E., at the meeting of several unmetalled roads and cross-country tracks, 51 miles north-east of Gorakhpur city. Population (1901), 1,564. This is the principal mart in the north of the District, but is declining in importance owing to its distance from the railway. A few miles away are the ruins of a castle or fort, the scene of a sharp fight during the Nepālese campaign.

Nicobars.—A group of islands in the Bay of Bengal, forming part of the ANDAMANS AND NICOBARS. The islands are nineteen in number, twelve being inhabited. The extreme length of space occupied is 163 miles, and the extreme width 36 miles. The names and dimensions are as follows:—

Physical aspects.

Geographical name.	Native name.	Area in square miles.
Car Nicobar	Pu	49·02
*Batti Malv	Et	0·80
Chowra	Tatat	2·80
*Tillanchong	Laok	6·50
Teressa	Taihlong	34·00
Bompoka	Poahat	3·80
Camorta	Nankauri	57·91
Trinkat	Laful	6·40
Nancowry	Nankauri	19·32
Katchall	Tehnyu	61·70
*Meroe	Miroe	0·20
*Trak	Fuya	0·10
*Treis	Taan	0·10
*Menchal	Menchal	0·50
Little Nicobar	Ong	57·50
Pulo Milo	Miloh	0·40
Great Nicobar	Loöng	333·20
Kondul	Lamongshe	0·50
*Cabra	Konwana	0·20
Total area	...	634·95

NOTE.—The names starred in the table indicate the islands that are uninhabited.

The Nicobars seem always to have been known as the 'L

Naked' to travellers, which term in the Indian tongues took the for of Nakkavār, the direct ancestor of the modern 'Nicobar.' Th mediaeval Arabic name 'Lankhabālūs' is a mere mistranscription an misapprehension of 'Nankabar' or 'Nakkavār.' The geographic names for the different islands have all obscure, complicated, an interesting histories.

The hills vary greatly in the several islands. The chief summits ar on Teressa, Bompoka, Tillanchong, Camorta, Nancowry, Katchall, an Great and Little Nicobar. The only hills over 1,000 feet are on Tillan chong and Great and Little Nicobar. The highest, Mount Thuillie is on Great Nicobar, 2,105 feet; while three peaks on Little Nicoba reach from 1,353 feet to 1,428 feet.

The Nicobars generally are badly off for fresh surface water; on Ca Nicobar there is hardly any, though water is easily obtained by diggin The only island with rivers is Great Nicobar, on which are considerab and beautiful streams: Galathea (Dak Kea), Alexandra (Dak Anain and Dagmar (Dak Tayal).

There is one magnificent land-locked harbour formed by Camort Nancowry, and Trinkat, called Nancowry Harbour, and a small on between Pulo Milo and Little Nicobar. The other anchorages ar mere roadsteads.

A considerable variety of scenery is presented by the several island Thus, from north to south, Car Nicobar is a flat coral-covered island Chowra is also flat, with one remarkable table hill at the south en (343 feet); Teressa is a curved line of hills rising to 867 feet; an Bompoka is one hill (634 feet), said by some to be volcanic; Tillan chong is a long, narrow hill (1,058 feet); Camorta and Nancowry ar both hilly (up to 735 feet); Trinkat is quite flat; Katchall is hil (835 feet), but belongs to Great and Little Nicobar in general form differing much from the others of the central group; Great and Litt Nicobar are both mountainous, the peaks rising to 1,428 feet in th Little, and to 2,105 feet in the Great Nicobar. Car Nicobar i thoroughly tropical in appearance, showing a continuous fringe of coc nuts; but a high green grass is interspersed with forest growth o Chowra, Teressa, Bompoka, Camorta, and Nancowry, giving the a park-like and, in places, an English look. Katchall and Great an Little Nicobar have from the sea something of the appearance o Sardinia seen from the Straits of Bonifacio. The scenery is often fin and in some places of exceeding beauty, as in the Galathea an Alexandra rivers and in Nancowry Harbour.

Geological knowledge of the Nicobars depends mainly on the obse vations of three scientific visitors, who did not, however, explore th islands: Dr. Rink of the *Galathea* (Danish) Expedition in 184 Dr. Von Hochstetter of the *Novara* (Austrian) Expedition in 185

and Dr. Valentine Ball in 1869. These observers are not in entire agreement.

The sandstones and shales of the southern islands are apparently similar to those distinguished as the Port Blair series in the Andaman Islands, and in both areas poor lignitic coal is found in the series. The clay stones and associated conglomerates of Camorta, Nancowry, and Trinkat are probably the same formation as that recognized in the Andaman (Ritchie's) Archipelago. Von Hochstetter connected the whole group geologically with the great islands of the Asiatic Archipelago farther south. From his observations the following instructive table has been drawn up, indicating the relation of geological formations to soil and vegetation, and showing how the formations have affected the appearance of the islands :—

Geological character of the underlying rock.	Character of the soil.	Character of the forest vegetation.
Salt and brackish swamp, damp marine alluvium.	Uncultivable swamp.	Mangrove.
Coral conglomerate and sand, dry marine alluvium.	Fertile calcareous soil, carbonate and phosphate of lime.	Coco-nut.
As above, with dry fresh-water alluvium.	Fertile calcareous sandy soil.	Large trees.
Fresh-water swamp and damp alluvium.	Cultivable swamp.	*Pandanus.*
Plastic and magnesian clay, marls; partially serpentine.	Infertile clay; silicates of alumina and magnesia.	Grassy, open land.
Sandstone, slate, gabbro, dry river alluvium.	Very fertile; loose clay and sand, rich in alkalis and lime.	Jungle; true primaeval forest.

Small traces of copper have been found in the igneous rocks, and the presence of tin and amber has been reported, but not confirmed scientifically. The white clay or marls of Camorta and Nancowry have become scientifically famous as being polycistina marls like those of Barbados.

Although the vegetation of the Nicobars has received much desultory attention from scientific observers, it has not been subjected to a systematic investigation by the Indian Forest department like that of the Andamans. In economic value the forests of the Nicobars are quite inferior to the Andaman forests; and, so far as known, the commercially valuable trees, besides fruit-trees, such as the coconut, betel-nut, and *mellori* (*Pandanus Leram*), are a thatching palm (*Nipa fruticans*) and a few timber trees, of which only that known as black *chuglam* in the Andamans (*Myristica Irya*) would be there classed as a first-class timber. Six other timber trees, known to exist, would be classed in the Andamans as second-class and one as a third-class timber. Dammer, from a *Dipterocarpus*, and rattans are among the minor products of the forests. The palms are exceedingly graceful, especially the beautiful *Ptychoraphis augusta*,

usually sold in England as a *Cocos*. Large clumps of casuarina an great tree-ferns are also striking features of the landscape in places.

In the old missionary records are frequently mentioned instanc of the introduction of foreign economic plants. In this matter th people have been apt pupils; and nowadays a number of famili Asiatic fruit-trees are carefully and successfully cultivated, includin pummelos (the largest variety of the orange family), lemons, lime oranges, shaddocks, *papayas*, *bael*-fruit (wood-apple), custard-apple bullock's hearts, tamarinds, jacks, and plantains; besides sugar-can yams, edible colocasia, pineapples, and capsicum. A diminuti orange, said to come from China and to have been introduced b the Moravian missionaries, is now acclimatized. It is quite possib also that with the missionaries came the peculiar zigzag garden fen of the northern islands. During the long commerce of the peop a number of Indian weeds (*Malvaceae* and *Compositae*) have been intr duced, including *Datura*, *Solanum*, *Flemingia*, *Mallotus*, *Mimosa*, &

There are no indigenous dangerous wild animals, but on Camor buffaloes and some cattle left by the missionaries have become wil On Great and Little Nicobar, and elsewhere in places, crocodiles a found in the rivers and on the coasts, while monkeys occur on Gre and Little Nicobar and Katchall, but not elsewhere. The marine an land fauna have generally the character of those of the Andaman though, while the latter are closely allied to Arakan and Burma, th Nicobars display more affinities with Sumatra and Java. The lan fauna, owing to greater ease in communications, has been bett explored than in the Andamans. The economic zoology also resembl that of the Andamans. Coral, trepang, cuttle-bones, sea-shells, oyste pearls, pearl-oysters, turtle and tortoise-shells, and edible birds'-nes are obtained in both groups of islands. In the Nicobars a somewh inferior quality of bath sponge is also found.

The climate generally is that of islands of similar latitude: very ho except when raining; damp, subject to rain throughout the ye generally in sharp heavy showers; unwholesome for Europeans, an in places dangerously malarious. The weather is generally unsettle especially in the south. The islands are exposed to both monsoon with easterly and north-easterly gales from November to January, an south-westerly gales from May to September; smooth weather experienced only from February to April and in October. The norm barometric readings (five years in Nancowry Harbour) vary betwe 29·960 and 29·797, being highest in January and lowest in June.

Statistics are scanty as regards temperature. They were kept up f fifteen years (1874–88) in Nancowry Harbour while the Penal Settl ment lasted, and were commenced on Car Nicobar in 1898. Th following tables give the main features, in degrees F.:—

NANCOWRY HARBOUR

	1884.	1885.	1886.	1887.	1888.
Mean highest in shade	May 91·3	April 91·6	April 91·9	July 86·5	April 91·2
Mean lowest in shade	Dec. 74·5	Dec. 73·3	Dec. 71·8	Feb. 72·2	Jan. 72·2
Highest in shade .	May 92·2	May 95·4	Aug. 98·2	April 90·6	May 97·4
Lowest in shade .	July 70·3	Sept. 71·0	Dec. 64·0	Mar. 66·4	Jan. 68·8
Dry bulb mean . .	July 83·3	Sept. 84·4	Dec. 84·0	Mar. 82·7	Jan. 83·9
Wet bulb mean . .	July 77·5	Sept. 78·1	Dec. 76·6	Mar. 77·2	Jan. 77·8

CAR NICOBAR

	1898.*	1899.	1900.	1901.†
Mean highest in shade .	Sept. 84·4	May 88·7	July 88·6	April 91·6
Mean lowest in shade .	Sept. 76·7	April 77·8	Feb. 77·6	Oct. 74·6
Highest in shade . .	Sept. 88·0	March 92·2	April 93·5	April 92·3
Lowest in shade . .	Nov. 70·7	Feb. 66·0	March 66·8	Jan. 71·6
Dry bulb mean . . .	Nov. 79·3	Feb. 83·2	March 83·8	Jan. 84·2
Wet bulb mean . . .	Nov. 77·2	Feb. 73·6	March 73·0	Jan. 74·0

* The observations in 1898 are available only from September 1 to December 31.
† In 1901 the observations are available only up to October 31.

The rainfall varies much from year to year. The following statistics are available :—

NANCOWRY HARBOUR

	1884.	1885.	1886.	1887.	1888.
Most wet days in a month . .	May . 21	July . 23	Nov. . 23	May . 27	Sept. . 22
Heaviest fall in a month . .	May 21·75	Dec. 17·90	Nov. 25·23	Nov. 20·41	Oct. 27·63

CAR NICOBAR *

	1898.	1899.	1900.	1901.
Most wet days in a month	Oct. . 18	June . 26	May . 20	Sept. . 22
Heaviest fall in a month .	Sept. 11·38	June 20·96	May 15·79	Sept. 19·77

* The same remarks apply to this table as to the temperature table for Car Nicobar.

Between 1874 and 1888 the wettest year in Nancowry Harbour was 1887 with 165 inches of rain, and the driest 1885 with 93 inches. The two full years of observation at Car Nicobar (1889–1900) showed 104 and 106 inches of rain respectively.

Cyclones occasionally visit the islands. Recorded instances are in May, 1885, and in March, 1892.

As the Nicobars apparently lie directly in the local line of greatest weakness, severe earthquakes are to be expected, and have occurred at least three times in the last sixty years. Shocks of great violence are recorded in 1847 (October 31 to December 5), in 1881, with tidal

waves (December 31) and milder shocks in 1899 (December). The tidal waves caused by the explosion of Krakatoa in the Straits of Sunda in August, 1883, were severely felt.

History.

Like the Andamans, the existence of the Nicobars has been known from the time of Ptolemy onwards; but unlike the Andamans, there is as long a history of European occupation as of other parts of the Eastern seas. The Nicobars began to attract the attention of missionaries in the seventeenth century at least, and probably much earlier, as the missionary Haensel speaks of *pater* as 'sorcerer' and Barbe of *deos* and *rea* as 'God,' indicating survivals of Portuguese missionaries. As early as 1688 Dampier mentions that two (probably Jesuit) 'fryers' had previously been there 'to convert the Indians.' Next we have the letters (in *Lettres Édifiantes*) of the French Jesuits, Faure and Taillandier, in 1711. In 1756 the Danes took possession of the islands to colonize, but employed the wrong class of men. The colony affiliated to Tranquebar, had perished miserably by 1759. The Danes then invited the Moravian Brethren to try their hands at conversion and colonization, and thus in due time commenced the Moravian (Herrnhuter) Mission, which lasted from 1768 to 1787. It did not flourish; and the Danish East India Company, losing heart, withdrew in 1773, and left the missionaries to a miserable fate. In 1778, by persuasion of an adventurous Dutchman, William Bolts, the Austrians appeared, but their attempt failed after three years. This offended the Danes, and from 1784 till 1807 they kept up a little guard in Nancowry Harbour. In 1790 and 1804 fresh attempts by isolated Moravian missionaries were made. From 1807 to 1814 the islands were in British possession during the Napoleonic Wars, and were then handed back by treaty to the Danes. During this time an Italian Jesuit arrived from Rangoon, but soon returned. In 1831 the Danish pastor Rosen, from Tranquebar, again tried to colonize, but failed for want of support and left in 1834. By 1837 his colony had disappeared, and the Danes officially gave up their rights in the place. In 1835 French Jesuits arrived in Car Nicobar (where the Order claim to have succeeded 200 years previously), and, though suffering great privation, remained in Teressa, Chowra, and elsewhere till 1846, when they too disappeared. In 1845 the Danes sent Busch in an English ship from Calcutta to resume possession, who left a good journal behind him, and in 184[illegible] took place the scientific expedition in the *Galathea*, with a new and unhappy settlement scheme. In 1848 the Danes formally relinquished sovereignty and finally removed all remains of their settlement. In 1858 the Austrian ship *Novara* brought a scientific expedition and a scheme for settlement, which came to nothing. In 1867 Franz Maurer strongly advised the Prussian Government to take over the

islands; but in 1869 the British Government, after an amicable negotiation with the Danish Government, took formal possession, and established in Nancowry Harbour, subordinate to that at the Andamans, a Penal Settlement which was withdrawn in 1888. In 1886 the Austrian corvette *Aurora* visited Nancowry, and produced a report and also a series of well-illustrated articles by its surgeon, Dr. W. Svoboda. At present native agencies are maintained at Nancowry Harbour and on Car Nicobar, both of which places are gazetted ports. At Car Nicobar is a Church of England Mission station, under a native Indian catechist attached to the diocese of Rangoon; the only one that has not led a miserable existence. The islands since 1871 have been included in the Chief Commissionership of the Andaman and Nicobar Islands.

The long story of European attempts to colonize and evangelize such a place as the Nicobars is a record of the extreme of useless suffering that merely well-intentioned enthusiasm and heroism can inflict, if they be not combined with practical knowledge and a proper equipment. Nevertheless, the various missions have left behind them valuable records of all kinds about the country and its people: especially those of Haensel (1779-87, but written in 1812), Rosen (1831-4), Chopard (1844), and Barbe (1846). Scattered English accounts of the islands are also to be found in many books of travel almost continuously from the sixteenth century onwards.

Despite the nominal occupation of the country by Europeans for so long, the inhabitants, even of Nancowry Harbour, have been systematic pirates; and a long list of authentic cases exists in which traders and others of all nationalities have been murdered, wrecked, and plundered even in quite recent times. The immediate object of the British occupation was to put a final stop to this, and in the nineteen years during which the Penal Settlement was maintained it was effectually accomplished. There is now no fear of a recrudescence of piracy.

The Penal Settlement in Nancowry Harbour consisted on the average of about 354 persons: 2 European and 2 other officers; garrison, 58; police, 22; other free residents, 35; convicts, 235. They were employed on public works similar to those in the Andamans. The health was never good, but sickness was kept within limits by constant transfer to the Andamans. Individual health, however, steadily improved, and there is no doubt that in time sanitary skill would have made the sick-rate approach that of the Andamans. The first year of residence was always the most sickly, partial acclimatization being quickly acquired. Some officers stayed two to three years. Mr. E. H. Man was in actual residence, at intervals, for six and a half years. Some of the free people remained several years; convicts usually three, and sometimes voluntarily from five to fifteen years

Nicobar Penal Settlement did not compare unfavourably with that at the Andamans at its close in 1888. The story of the Settlement was well told by Mr. E. H. Man in a final report, which is printed at p. 188 of the *Census Report* for 1901.

Like all the other Governments which held an interest in the islands, the British tried a colony in 1884, which failed. But the attempt drew from the most experienced officer there, Mr. Man, the following advice of value, considering the perennial interest in these islands betrayed by European speculators:—

'To colonize the Nicobars employ Chinese; send them to Great Nicobar; employ agriculturists who are not opium-users; maintain quick and frequent communication with the Straits Settlements; assist the colonists in transporting their families; provide them with ready means of procuring food, clothing, medicines, tools, and implements.'

A large capital and much perseverance would always be necessary for exploiting the Nicobars with any hope of success.

Population.

The indigenous population increased slightly from 5,942 in 1883 to 5,962 in 1901, when the total population was 6,511.

The Nicobarese are not divisible into tribes, but there are distinctions, chiefly territorial. Thus, they may be fairly divided into six groups: the people of Car Nicobar, Chowra, Teressa with Bompoka, the Central Group, the Southern Group, and the single inland tribe of the Shom Pen on Great Nicobar. The differences to be observed in language, customs, manners, and physiognomy of the several groups may, with some confidence, be referred to habitat and the physical difficulties of communication. There is, however, nothing in their habits or ideas to prevent admixture of the people, for both intermarriage and mutual adoption are as freely resorted to as circumstances will admit.

The ethnological interest attaching to the Shom Pen lies in the fact that, owing to their fear of the coast people of the Great Nicobar, and indeed of each other at a little distance from their houses, and the sterility of known crosses between them and the coast people, they probably represent the race in its purest form. It is also necessary to affirm distinctly that they are Nicobarese pure and simple; for so lately as in Yule's edition of Marco Polo it is stated, partly on the authority of a former Chief Commissioner, that they were an aboriginal people like the Andamanese. There is no radical difference between a Shom Pen and any other Nicobarese. The differences are merely such as are to be expected among people living an almost isolated existence.

The Nicobarese dialects have been subjected to more or less elaborate study by missionaries and others since 1711, culminating

in Man's excellent *Dictionary of the Central Nicobarese Language* (1889), with Grammar attached. The Linguistic Survey has quite recently determined that Nicobarese belongs to the Mon-Khmer family. The language is spoken in six dialects, which have now become so differentiated in details as to be mutually unintelligible, and to be practically, so far as actual colloquial speech is concerned, six different languages. These are limited in range by the islands in which they are spoken: Car Nicobar (3,451); Chowra (522); Teressa with Bompoka (702); Central—Camorta, Nancowry, Trinkat, Katchall (1,095); Southern—Great Nicobar coasts and Kondul, Little Nicobar, and Pulo Milo (192); Shom Pen, inland tribe of Great Nicobar (348).

The Nicobarese are natural linguists. Only a century ago Portuguese was the trade language of the islands, with a sprinkling of Danish, German, and English. Malay and Chinese were both spoken before Portuguese; and now English, Burmese, and Hindustāni are well understood. The women know only their own language, and are dumb before all strangers. And here as elsewhere among polyglot peoples, natives of different islands have to converse in a mutually known foreign tongue—e.g. Hindustāni, Burmese, Malay, or English—when unable to comprehend each other's dialects. There is a custom of tabu, which in the Nicobars, as elsewhere where it is in vogue, has seriously affected the language at different places. Any person may adopt any word in the language, however essential or common, as his or her personal name, and when he or she dies it is tabued for a generation, for fear of summoning the ghost. The Nicobarese speech is slurred and indistinct; but there is no abnormal dependence on tone, accent, or gesture to make the meaning clear. The dialects are, as might be expected, rich in specialized words for actions and concrete ideas, but poor in generic and abstract terms.

Nicobarese is a very highly developed analytical language, with a strong resemblance in grammatical structure to English. It bears every sign of a very long continuous growth, of both syntax and etymology, and is clearly the outcome of a strong intelligence constantly applied to its development. Considering that it is unwritten and but little affected by foreign tongues, and so has not had extraneous assistance in its growth, it is a remarkable product of the human mind. There is no difference in the development of the different dialects. The speech of the wild Shom Pen is as advanced in its structure as that of the trading Car Nicobarese.

The growth of the language has been so complicated, and so many principles of speech have been partially adopted in building it up, that nothing is readily discoverable regarding it. The subject and predicate are not immediately perceptible, nor are principal and subordinate sentences. The sentences cannot be analysed correctly at once, nor

can the roots of the words be separated without great care from the overgrowth. Neither syntax nor etymology is easy, and correct speech is very far from being readily attained.

Grammatically, the point to bear in mind is the order of the words, which is practically the English order, especially as functional inflexion is absent to help the speaker to intelligibility, and there is nothing in the form of the words to show their class, whether nouns, verbs, adjectives, and so on. Prepositions, conjunctions, auxiliaries, adverbs, and the particles of speech are freely used, and so are elliptical sentences. Compound words and phrases, consisting of two or more words thrown together and used as one word, are unusually common, and the languages show their Far-Eastern proclivities by an extended use of 'numeral coefficients.'

The great difficulty lies in the etymology. Words are built up of roots and stems, to which are added prefixes, infixes, and suffixes, both to make the classes of connected words, and to differentiate connected words when of the same class: i. e. to show which of two connected words is a verb and which a noun, and to mark the difference in the sense of two connected nouns, and so on. But this differentiation is always hazily defined by the forms thus arrived at, and the presence of a particular classifying affix does not necessarily define the class to which the word belongs. So also the special differentiating affixes do not always mark differentiation.

Again, the affixes are attached by mere agglutination, in forms which have undergone phonetic change, and by actual inflexion. Their presence, too, not infrequently causes phonetic change in, and inflexion of, the roots or stems themselves.

The chief peculiarity of the language lies in a series of 'suffixes of direction,' indicating the direction (north, south, east, west, above, down, below, or at the landing-place) of any action, condition, or movement. But even suffixes so highly specialized as these are not by any means exclusively attached to words the sense of which they can and do affect in this way.

Only by a deep and prolonged study of the language can one learn to recognize a root, or to perceive the sense or use of an affix; and only by prolonged practice could one hope to speak or understand it correctly in all its phases. Nicobarese is, in this sense, indeed a difficult language.

The religion of the Nicobarese is an undisguised Animism, and the whole of their very frequent and elaborate ceremonies and festivals are aimed at exorcising and scaring spirits. Fear of spirits and ghosts (*iwi*) is the guide to all ceremonies, and the life of the people is very largely taken up with ceremonies and feasts of all kinds. These are usually held at night, and, whether directly religious or merely convivial

seem all to have an origin in the overmastering fear of spirits that possesses the Nicobarese. It has so far proved ineradicable; for two centuries of varied and almost continuous missionary effort have had no appreciable effect on it, if some of the Creation stories recorded from the southern group by De Roepstorff, and the terms learnt from the missionaries still surviving among some of the Central Group islanders, be excluded. A few rosaries existed a generation ago in Nancowry Harbour. The only outcome of the religion of the Nicobarese of political import is the ceremonial execution for grave offences against the community, such as murder, habitual theft, or public annoyance. A person so offending is regarded as being possessed and is formally put to death with great cruelty. This is the 'devil murder' of the Nicobars, now being gradually suppressed. Witches and, of course, witch-finders abound. The superstitious and animistic beliefs of the Nicobarese explain a good many articles to be seen prominently about their houses and villages. It follows that the mind of the Nicobarese is largely occupied with superstitions, which relate to the ancestors, the sun, and the moon. The funeral ceremonies show that human shadows are the visible signs of the spirits of the living, and on Car Nicobar there is a special ceremony for 'feeding shadows.' Every misfortune and sickness is caused by spirits or witches, especially that scourge of Chowra, elephantiasis; and the remedy in every case is a special exorcism by means of the *menluana*, or doctor-priests, or general exorcism performed privately. This last class of remedy includes the libation, which is always poured out before drinking and at spirit feasts. Lucky and unlucky actions and conditions naturally abound, and it is lucky to get a pregnant woman and her husband to plant seed in gardens. Uneven numbers are unlucky, and no others are allowed at funerals.

There seems to be an embryonic invocation of supernatural punishment, an idea so much developed in the *traga* and *dharna* of India. Thus, setting fire to their own huts and property is one way of showing shame or disgust at the misconduct of relatives and friends; and Offandi, the chief of Mus, in Car Nicobar, once attempted to dig up his father's bones before they were transferred to the ossuary, and to throw them into the sea, because an important villager had called his father a liar.

The spirit feast is a general exorcism, performed by the family and friends, with the aid of the *menluana*. The men sit smoking and drinking; and the women bring from the family stock provisions, implements, weapons, and curiosities, which last, after a good howl, they break up and throw outside the house. A large specially fattened pig is then roasted whole, and divided between the ancestors and the party, chiefly the latter. By this the spirits are mollified. The *menluana* now

commence their business, worked up to an ecstasy by drink and their mysteries. Their faces are painted red and they are rubbed with oil. They sing dolefully in a deep bass voice, and rush about to catch the *iwi*, or spirit of harm, and coax, scold, and abuse him, accompanied by a tremendous howl from the women, till after a struggle he is caught and put into a small decorated model of a boat, and towed far out to sea. Being now safe from the spirit, the fun is kept up long, with eating, drinking, singing, and dancing.

Evil spirits, especially those causing sickness or likely to damage a new hut, can be caught by the *menluana* and imprisoned in cages which are placed on special rafts and towed out to sea. When the raft lands at another village and transfers the spirit there, quarter-staff fights take place which are described below in the section on local characteristics. In the north, elaborate feasts and ceremonies are held to confine the spirits and ghosts to the *elpanam*, a public ground and cemetery, and to keep them away from the coco-nut plantations during the trading season.

Tabu, light or serious in its consequences, enters largely into the funeral customs, and appears again in a tabu of warning fires, light in houses, smoking, and speech, for a month after sweeping the spirits out of the cemetery on Car Nicobar. The strongly marked tabu of the names of deceased relatives and friends, which lasts for a whole generation, has already been mentioned. Tabu further affects the form of the huts in some villages and islands. Among the Shom Pen the hut in which a death has occurred is tabued for an uncertain period. The making of pottery is tabued except on Chowra, and certain large kinds of pots are tabued to certain old people at the memorial feasts. Making shell lime for betel-chewing is tabued, except on Car Nicobar, Katchall, Nancowry southern group, and parts of Camorta. One kind of fish-trap is tabued for every place, except Nancowry Harbour in the rainy season. There is a common kind of private tabu of much interest, and the persons undergoing it are termed *saokkua*, 'dainty,' 'fastidious.' It amounts to an embryonic asceticism. These people will not eat any food cooked by others, nor drink well-water. They will not eat domesticated fowls or pigs, and their drinking-water must be rain or running water. They will only drink water drawn by themselves at a distance from the village and poured out of a coco-nut shell. Bread, biscuits, and rum are the only food and drink they will accept from others. There is also a good deal of pretence in the observation of the highly inconvenient funeral tabus. The late Okpank, or Captain Johnson, a well-known chief in Nancowry Harbour, once refused rum on board a visiting steamer because of the tabu consequent on the death of a near relative, but was eager to get beer in its place.

The funeral customs, the whole object of which is spirit-

distinct in the north and south, but everywhere extravagant grief is displayed at all deaths for fear of angering the ghost. In the Central and Southern groups, notice is given to all friends and relatives, who are expected to, and in the latter case must, appear if possible with presents at the funeral ceremonies in order to appease the ghost. Relatives unavoidably absent are tabued the village until the first memorial feast (*entoin*) a few days later. The eyes of the dead are closed to prevent the ghost from seeing, the body is laid out, feet to the fireplace, head to the entrance of the hut, and washed with hot water continually, once to five times according to the period intervening before interment. Then follow eight obligatory duties: removal of all food, as it is tabued to the mourners till after the ceremony of purifying the hut, only hot water and tobacco being allowed; the destruction of the movable property of the deceased and placing the fragments on the grave as a propitiatory sacrifice to the ghost; the collection of a little food at the head of the corpse for the ghost, the remains being thrown to the dogs and pigs; the construction of a bier made out of the deceased's or a mourner's broken-up canoe; the digging of the grave, 5 feet deep, and erection of the two head-posts and the foot-post; the making of the fire to bar the ghost, on the ground at the hut entrance, out of chips from the bier and coco-nut husks; the completion of the grave by placing the sacrificed articles on the ground or in the deceased's destroyed basket; the throwing of pig-tusk trophies, some *kareau* or spirit-scarers, and pictures (*hentakoi*) into the jungle.

The deceased is buried in, or with, all the clothing and ornaments possessed in life to appease the ghost, and ferry-money is placed between the chin-stay and the cheek. The corpse is entirely swathed, except as to a small portion of the face, in new cloths of any colour, except black, presented by the mourners for the purpose. Burial takes place at sundown, before midnight, or early dawn, in order to prevent the shadows of the attendants from falling into the grave and being buried with the corpse.

Before removal to the grave, the body is taken to the centre of the hut and placed crosswise to the entrance, where it is mourned a short time, and then carried down the entrance ladder head foremost. Some of the mourners occasionally make a feint of going to the grave with the deceased, and the priest (*menluana*) exhorts the ghost to remain in the grave until the memorial feast, and not to wander and frighten the living. When in the grave the body is pinned into it by special contrivances, to prevent the *mongwanga* or body-snatching spirits from abstracting it. The spirits of those present are finally waved out of the grave by a torch, and it is quickly filled in. At the *laneatla* feast the skeleton is exhumed and thoroughly cleaned together with the f

money and silver ornaments, and reinterred, a custom which is a survival apparently of the still existing northern custom of reinterment in communal ossuaries. On Chowra and Teressa the dead are swathed in cloths and leaves, and put into half a canoe cut across for the purpose, and placed in the forks of a pair of posts about 6 feet from the ground. These canoes in Chowra are kept in a cemetery in a thick grove about 50 yards from the public buildings of the village, and in Teressa on the sea-shore, till the bodies fall out and are partly devoured by the pigs. They rapidly decompose and become skeletons, apparently without much effluvium arising from them. Children are put into small half-canoes. Every three or four years the bones are thrown at a feast into a communal ossuary. An account of the great ossuary feast by Mr. V. Solomon, Agent at Car Nicobar, is given at p. 226 of the *Census Report*, 1901.

On Car Nicobar there is serious wrestling over the corpse on its way to the grave: one party being for the burial and the other against it. This goes on till the corpse falls to the ground and several of the carriers are injured. It is then sometimes just thrown into the grave with the sacrifice of all the deceased's live-stock. On Car Nicobar there is only one short head-post, but this is carefully made in a convenient pattern. On Car Nicobar also there is a special ceremonial for the burial of highly revered personages, which is a distinctly Indo-Chinese custom.

The 'devil murders' of Car Nicobar are serious, and cases occasionally occur in Chowra, Teressa, and the Central group. The missionary Haensel (1779–87) reports them from the Central group. At p. 232 of the *Census Report*, 1901, will be found notes on every case that had come to light during the previous twenty years. They are true ceremonial murders of men and women, and sometimes even of children, undertaken for the public benefit by a body of villagers after a more or less open consultation, to get rid of persons considered dangerous and obnoxious to the community. But the root-cause is always spirit possession; the victim is bad and dangerous because he is possessed. The orthodox method is very cruel. The legs and arms are broken or dislocated so that the victim cannot fight; he is then strangled and his body sunk at sea.

The *menluana* is a Shaman or doctor-priest of a sort common to many half-civilized peoples, but an interesting variety at Car Nicobar is the *mafai* or novice, the word actually meaning 'one undergoing sacerdotal instruction.' Any one that feels himself inspired may become a *mafai*, but he does not necessarily pass on to the stage of a *menluana*.

Tales of origin and the like are told in a jerky, disjointed fashion. Chowra is the holy land, the cradle of the race, where the men are

wizards, a belief that the inhabitants of Chowra turn to good account for keeping the control of the internal trade in their own hands. The Car Nicobar story of origin is that a man arrived there from some unknown country on the Tenasserim coast with a pet dog. By this dog he had a son, whom the mother concealed in her *ngong* or coconut leaf petticoat. The son grew up, killed his father, and begot the race on his own mother. The end of the long bow tied round the foreheads of young men is to represent the dog ancestress's ears, and the long end of the loin-cloth her tail. They treat all dogs kindly in consequence, whence perhaps we may trace a lost totemism among them.

Physically there is little difference between the inhabitants of the various islands, except that the Shom Pen are about an inch shorter, and less robust than the coast tribes, are anaemic in complexion, and have protuberant bellies, all due probably to diet, surroundings, and mode of life. Mr. E. H. Man's measurements show that the Nicobarese are a fine, well-developed race.

AVERAGE MEASUREMENT IN INCHES

	Height.	Full span.	Seated height.	Foot.	Chest.	Weight in lb.
Men . .	$63\frac{3}{4}$	67	$33\frac{1}{2}$	$9\frac{1}{2}$	$34\frac{1}{2}$	136
Women .	60	$61\frac{1}{2}$	$31\frac{1}{2}$	$8\frac{3}{4}$	...	118

The following may be taken as the prominent external characteristics of the people. The forehead is well formed, the lips are normal and the ears of medium size, the eyes are obliquely set, the nose wide and flat (rarely aquiline), the cheek-bones prominent, the face somewhat flat, and the mouth large. The complexion is yellowish or reddish brown. The figure is not graceful, the waist being square and the back bending inwards sharply. The legs are extraordinarily developed, and the foot is long. Such prognathism as is observable is due to the habits of prolonged lactation, sucking green coco-nuts, and betel-chewing until the incisors of both jaws are forced forward in a revolting manner. Owing to their habit of dilating the lips by constant betel-chewing, adults of both sexes are often repulsive in appearance.

The skin is smooth throughout life and perspires freely. The teeth are healthy and, though disfigured, are not destroyed by the habit of perpetual betel-chewing. They loosen, however, at 50, and fall out before 60, owing no doubt to this habit. The hair is of the straight tough type (sometimes curly), growing to about 20 inches in length, and is a dark rusty brown in colour.

The recuperative powers are good, being much better than those of natives of India and equal to those of Europeans. Life is not regarded

as precarious after five years of age. Wounds, cuts, and contusions heal with great rapidity. Child-birth is easy, but not to an abnormal extent, and the women are proud of a large family. The child-bearing age is 15 to 40, and children are suckled for two years. There is no partiality for male children, girls being as greatly, if not more, valued.

Living in a land of plenty, the Nicobarese endure hunger and thirst badly, and will eat and drink and chew betel at short intervals all day long, whenever practicable. They avoid the sun. Want of sleep is, however, borne with ease on occasion, though the sleepiness of the people in the daytime has deceived visitors. It is due to their habit of fishing and holding their ceremonies at night. They can carry very heavy weights, paddle canoes long distances, and can walk well and far without undue fatigue.

The gait is sluggish, slouching, and inelastic, but extreme agility is shown in climbing the coco-nut palm, and activity generally when there is anything important to be done. The Nicobarese on the whole do well what they are obliged to do. The daily necessary work is done regularly and systematically, and with a strict division of tasks between the sexes. They are expert in paddling and sailing boats, but not good swimmers. They are skilful and persevering sea fishermen, spearing fish by torch-light from canoes and catching them in sunken baskets, but not in nets or with stakes. Fishing lines are, however, well understood.

The gait betrays the nature. The Nicobarese will not exercise or tax his powers of endurance if he can help it, resting with his load every few hundred yards, and he is an adept in lessening the weight of coco-nuts when obliged to carry them. He will not walk more than five miles without a rest. Both sexes understand the advantage of working together at heavy tasks, to the accompaniment of the voice. The women never go far from their homes.

The Nicobarese boys attain puberty at about 14, girls at about 13; they attain full height at about 18 and 17, and full growth at about 22 and 21; the men marry at about 24, and the women much earlier, 14 to 15; they age at about 50, and live on to 70 and even 80. There are more old women than old men, and length of life is apparently greater than in India or Indo-China.

Insanity is unknown, epilepsy almost so, and bodily abnormalities are rare. The great epidemics of the neighbouring continents—cholera, typhoid, small-pox, measles, and *beri-beri*—are usually absent and never endemic. Leprosy is unknown. Syphilis and cholera as epidemics have been imported, apparently since 1800. Malarial fevers are rampant everywhere, but are worst in the Central group; and though the inhabitants of the locality resist them, to all aliens they are

especially deadly. Elephantiasis, as a mosquito-borne disease, has an interesting history. On Chowra, in 3 square miles, 522 people, or about 20 per cent., are attacked with it; but it is unknown on Car Nicobar, and is rare everywhere else. The other diseases are climatic, and occur chiefly at the change of the monsoons.

The sense development is normal, any excellence being due to especial development for daily requirements. Taken as a whole, the Nicobarese, though for a very long while they were callous wreckers and pirates, and though they show great want of feeling in the 'devil murders,' are a quiet, good-natured, inoffensive people, honest, truthful, friendly, helpful, polite, and extremely hospitable towards each other, and not quarrelsome. By inclination they are friendly and hospitable towards, and not dangerous to, foreigners, though sometimes suspicious of and surly towards them, especially on Chowra and Katchall West. They are kindly to children, the aged, and those in trouble, even when foreigners; respectful and kindly to women, the wife being a help not a slave; and deferential towards elders. They are very conservative, and bound down by custom in all things, changing, however, with the times in certain respects. Thus, since 1840 they have abandoned leaf tobacco for China tobacco twisted dry into cigarettes, Burmese fashion.

The mental capacity of the Nicobarese is considerable. It is lowest in the south and highest in the north, and there is a marked difference between the sluggish inhabitants of Great Nicobar and the eager trader of Car Nicobar. A noteworthy mental characteristic is the capacity for picking up after 'pigeon' fashion any foreign language with which they come in contact.

The chief article of food is the coco-nut, next in importance being *Pandanus* pulp, fish, and imported rice. Pigs and fowls are kept for feasts. Dogs are eaten on Chowra. Cultivated fruits of many Oriental kinds are eaten everywhere. The Nicobarese are very fond of stimulants, and smoke a great deal of tobacco. *Pān* is the usual stimulant, and is in perpetual use. They make toddy from the coco-nut palm, constantly use it, and often get very drunk on it. Any kind of foreign spirit is acceptable, rum and arrack being in much request. This is their great trouble with traders and foreigners, and has led to many disputes and crimes.

The people are well housed, the houses being often of considerable size, containing an entire family. The house is raised on piles 5 to 7 feet from the ground, and consists of one large boarded floor, with mat and sometimes boarded walls, but without divisions. It is approached by a movable ladder. The houses are usually circular, with a high thatched pent roof, but they are sometimes oblong. The thatch-

platforms for seats or food. There is much rude comfort about su a dwelling, and inside it everything has its place and all is kept cle and in order. The cooking-place is in a separate small hut, in whi are kept the coco-nut water-vessels and the *larom* or prepared *Pa danus*. Besides the dwelling-houses, the northern villages cont special houses for the moribund and the lying-in women. The inter of the villages and the immediate surroundings of houses are, in t north, well swept and clean. Nicobarese villages vary in size from o or two houses to about fifty or more, and are situated in all sorts sites, but usually on or near the sea-shore. On a backwater or site s from a heavy sea the house piles are at times driven into the sand be high and even low-water mark. In the house are kept all the utens weapons, ornaments, and belongings of the family, in chests on the flo on platforms built into the roof, and about the walls and roofs. places the most striking objects to the visitor are the *kareau*, or spi scarers, which are figures, sometimes life-size, of human beings, of armed with spears, of mythical animals based on fish, crocodiles, bir and pigs, and pictorial representations of all kinds of things, painted colours on areca spathes stretched flat. All these are connected w their animistic religion. There is often an armed figure just above t ladder. Outside the houses, too, are similar 'very bad devils,' spi scarers. Among common objects, also, of which the use might eas be mistaken, one is the row or rows of pigs' lower jaws with tus These are not mementoes of sport, but of the skill of the housewife rearing large pigs for food. Bundles of wood, neatly made, are ke under the house, not for domestic use, but ready to place on the ne grave that it will be necessary to dig. So, again, models of ships o side houses on Car Nicobar are not spirit-scarers, but signs to trad that the people are ready to deal in coco-nuts.

On Car Nicobar and Chowra, near each village by the seash is the *elpanam*, where are the public buildings of the village, consisti of a meeting-house, a lying-in house, a mortuary, and the cemete Village affairs, canoe races, &c., are settled at the assembly-hou a woman must be confined and go through a probationary period uncleanliness in the lying-in house, and every one ought to die the mortuary: a dying person is removed thither if possible. At t *elpanam* are provided places for all foreign traders to set up th houses, shops, and copra factories.

The Nicobarese busy themselves, firstly, with household duties, t care of their fruit-gardens, and the manufacture of articles for use a sale; secondly, with religious ceremonies and feasts; and, thirdly, w trade, external and internal. Special occupations are pottery and ce monial ironwork on Chowra, basket-work on Car Nicobar, making canoes and iron spears in the Central group, and of baskets, matti

wooden spears, and the collection of jungle produce in the Southern group. Car Nicobar grows half the coco-nuts in the islands.

The great pastime of the Nicobarese is feasting, and besides the numerous religious feasts and ceremonies they are constantly giving each other private feasts. The people do not seem to play games much, their leisure time being so occupied with religious and other festivals. But wrestling and playing with the quarter-staff are favourite amusements. For children, spinning-tops are ingeniously made of the betel-nut and a bit of stick; and a toy windmill, of the fashion well-known in Europe, is constructed from the seed of a creeper. Models of all kinds of articles are also made as toys, and toy imitations of the articles a dead child would have used in later life are pathetically placed on its grave.

The Nicobarese dance is a circular dance performed in or near the houses, and in the north at the assembly-house. The dancers lay their arms across each other's backs, with the hands resting on the next person's shoulder, and form a circle. Both sexes join, but in separate groups. There is a leader in a monotonous concerted song, and they step right and left under his direction, and jump in unison, coming down on both heels. The Nicobarese are a musical people, and sing clearly and well in unison. They compose songs for special occasions, and are adepts at acrostic songs. They have a flageolet and a stringed musical instrument, made of bamboo, on which they accompany themselves.

Families are patriarchal, and as a rule live jointly. In such a household the father is the head of the family, and after his death the mother. When both parents are dead, the eldest son succeeds. Houses, and especially coco-nut and vegetable gardens, are private property, passing by heredity. The last are carefully marked off, and each owner has distinct notions as to the extent of his holding, which is carefully denoted by his private mark. On the death of the parents all real property, such as coco-nut and *Pandanus* trees, fruit-trees, and all cultivated gardens, is equally divided among the sons, except that most of the coco-nut trees pass to the eldest son. Practically all the father's personal property, purchased with coco-nuts, in the way of clothing and luxuries of every kind, is destroyed at his death on his grave, a custom that keeps the people perpetually poor. The daughters inherit nothing at the death of the father. Their shares are allotted on marriage by their father or their brothers, and consist of the trees and pigs. The whole subject of proprietary rights is still, however, most obscure, and requires more investigation than has hitherto been possible.

Girls are free to choose their husbands; but, as is the rule where female freedom of choice in marriage exists, the question of wealth

influences relatives, who bring pressure on the girls in favour of certain suitors. There is no marriage ceremony, and, though dissolution of marriage by mutual consent is common, unfaithfulness during marriage is rare. On separation the children go to relatives, and step-children are not kept in the house. Children, being valuable possessions in a thinly populated land, are looked on as belonging to the families of the persons who produced them.

Social emotions are clearly expressed by exclamations of the usual kind, and a great deal of politeness is observed in language, though the completeness of social equality prevents the use of honorifics of any kind, or titular forms of address. The social emotions are in fact strongly felt, and domestic troubles have led to suicide. Quarrels are nearly always settled by mutual friends, and seldom get beyond angry words, the final settlement being concluded by a feast given by the party adjudged to be in the wrong. Disputes arise over superstitions. When a family evil spirit has been caught and sent to sea in a model canoe which lands at another village or house site, the evil spirit has been transferred to a new house, and vengeance results. This is taken secretly by the aggrieved party and all its friends, who collect and on a dark night attack the offenders, while asleep, with quarter-staves steeped in pig's blood and covered with sand. They wear helmets consisting of a coco-nut husk, and smear their faces with red paint so as to look savage. There is, however, not much real ferocity in the attack. The sticks are so long that they cannot be used in the houses and so the attacked party has to come out, which it does readily. As every village is liable at any time to such an attack, it is always prepared, and keeps quarter-staves and coco-nut helmets ready for the purpose. A great deal of noise and some vigorous hammering continues till one party is getting the worst of it, and then the women interfere and part the combatants with cutlasses. Sore limbs, bruises and broken fingers result, of which the heroes are proud, but no heads are broken. When all the trouble is over, the aggressors remain as the guests of the other party, and after a couple of days' feasting return home. This procedure is adopted also when serious general offence is given by any particular person.

A child is named immediately after birth by its father, and an additional name is granted as a mark of favour by a friend. The latter is frequently changed in after life, which causes trouble when identity is sought by officials. A chief cause of the change is the tabu of the name of deceased relatives and friends for a generation, from fear of summoning their spirits, and the obligatory assumption of the name of the deceased grandfather by men and grandmother by women, on the death of both parents. Any person may adopt a name formed from any word in the language, a custom which, combined with the

tabu on death, has a serious effect on the stability of the language in any given locality, and has caused the frequent use of synonyms.

The Nicobarese have for a long while had a great fancy for foreign, chiefly English, names, with an extraordinary result, for traders and others have for generations allowed their fancy play in giving ridiculous names, which have been used in addition to their own by the people in all good faith. Many persons also bear Indian, Burmese, and Malay names in a corrupted form. A chief, or headman, is usually styled Captain, a title they regard as lofty from observing the position of a ship's commander on board.

Manufactures.

The Nicobarese are good carpenters, and can make fair models of most of their larger articles. They can work in, but not make, iron, and are adepts in constructing all sorts of articles for domestic use (*vide* Man's elaborate *Catalogues of Objects made and used by the Nicobarese*). Harpoons and spears of all sorts are made well, with detachable heads for pigs. All the heads are of iron, except for small fish, and among the Shom Pen, who use hard wooden spears with notched heads. They make and use a crossbow in some places, and everywhere quarter-staves (in the play of which they are adepts), and helmets, made of padded cloth or coco-nut husk. The pottery of Chowra is manufactured up to a large size, and turned by hand, not on the wheel, every maker placing his own distinctive mark under the rim. Pottery is used for food that is cooked, such as pork, *Pandanus*, and *Cycas* paste, fowls, rice, vegetables, coco-nut oil (for which, however, they have besides a special press). Fish is cooked in pots procured by trade from India. Rain-water is also caught ingeniously in Indian pots.

A large portion of the manufactures is of articles connected with superstitions; but, in addition, the Nicobarese are very expert and neat in making articles for daily use from the leaves and spathes of palms, the leaf of the *Pandanus*, the shell of the coco-nut, and out of wood, iron, shells of fish, fibres of several kinds, bamboos, and canes.

The canoes are skilfully outrigged structures, light, and easily hauled up and carried. They are made of one piece of wood hollowed out and burnt, and very carefully constructed. In shape they are flat-bottomed, big-bellied, narrowed towards the top, with a small raised taffrail, battens for seats at regular intervals, and long and projecting bows. They are fast sailers, and, when properly managed, safe in surf and rough water. The racing canoes are specially built and costly, with ornamental masts and flagstaffs in the bows. The indigenous masts and sails are wide strips of clipped coco-nut or *nipa* leaves, and number two to four at intervals. Cotton lateen and other sails of borrowed patterns are, however, nowadays more commonly used. Clothing is nearly all imported, and so are most of the ornaments worn.

The Nicobarese cultivate no cereals, not even rice, and very little cotton, though carefully taught by the Moravians; but they exercise some care and knowledge over coco-nuts and tobacco, and have had much success with the many foreign fruits and vegetables introduced by Danish and other missionaries. They club together in making their gardens, which are industriously cultivated and always, if possible, out of sight. They domesticate dogs, fowls, and pigs, which they fatten; but not cattle and goats, as they use no milk. They tame parrots and monkeys for sale. The staple article of trade has always been the universal coco-nut, of which it is computed that 15 millions are produced annually, 10 millions being taken by the people, who in most places drink nothing but coco-nut milk, and 5 millions being exported, $2\frac{1}{2}$ millions from Car Nicobar and $2\frac{1}{2}$ millions from the remaining islands. The export consists of whole nuts and copra (pulp prepared for expressing oil). There is some export, also, of edible birds'-nests, split cane, betel-nuts, trepang (*bêche-de-mer*), ambergris, and tortoise-shell. The imports consist of a great variety of articles, including rice, cotton cloths, iron, cutlasses (*das*), knives, tobacco, crockery and pottery, glass-ware, silver and white-metal ornaments, sugar, camphor, wooden boxes and chests, biscuits, fishing nets, Epsom salts, turpentine, castor-oil, looking-glasses, thread, string, matches, needles, European hats, old suits of cloth, and cotton clothing. Spirits and guns, though welcome, are contraband. As with all semi-civilized peoples, articles of trade to be accepted must conform closely to fixed pattern. The foreign trade is in the hands of natives of India, Burmans, Malays, and Chinamen, who visit the islands in schooners, junks, and other small craft.

Commerce and trade.

The system of trade is for the foreign trader to give in advance to the local owner of trees the articles settled on for a certain quantity of coco-nuts, and then to recover their value from the trees. He must himself get the nuts down from the tree, make the copra and take it away and the husks too, if he wants them. The Nicobarese does nothing but reckon by tally what is taken. It is a laborious system for the trader and requires systematic working. At pp. 242–3 of the *Census Report*, 1901, will be found lists of trade articles and their value in coco-nuts.

There is an old-established internal trade, chiefly between the other islands and Chowra for pots, which are only made there. Chowra is also a mart for the purchase of racing and other canoes, made elsewhere in the islands. The season for trade is December to April. The Southern group brings to the Central group baskets, tortoise-shell, split rattans for canoes, *Celtis* bark and cloth for matting and formerly for general clothing, and a few canoes. These are passed on to

Chowra, with spears and racing canoes made in the Central group, in return for a certain class of iron hog-spears and pots, and are sold by the Chowra people to Car Nicobar for cloth, baskets of Car Nicobar make, and a great variety of articles valued at Car Nicobar in coconuts. There is a considerable trade between the Shom Pen and the coast people of Great Nicobar in canes, canoes, wooden spears, bark-cloth, matting, and honey, for iron *das* and cotton cloths.

Without using coin, the Nicobarese have always been ready and quick-witted traders in their great staple the coco-nut, using it also as currency, and obtaining for it even important articles of food which they do not produce, their clothing, and many articles of daily use. The system is to value the article to be purchased in nuts, and to pay for it by the other articles also valued in nuts. Thus land valued at 10,000 nuts has been paid for by about 50 manufactured articles valued in the aggregate at 10,000 nuts. So also a racing canoe valued at 35,000 nuts has been paid for by some 200 articles valued in the aggregate at the same figure.

The Nicobarese keep no records of reckoning beyond tallies, and have no methods for any mathematical process beyond tallying. The basis of all reckoning is tally by the score, and for trade purposes by the score of scores; and on this basis they have evolved a system which is naturally clumsy and complicated, but has become simplified where trade is briskest, and is made exact by an interesting series of rising standards up to very large figures. Tally is ordinarily kept by nicks with the thumbnail on strips of cane or bamboo, and on Car Nicobar, where the trade in coco-nuts is largest, by notches cut in sets on a stick. For ordinary purposes Nicobarese reckoning stops at about 600, except on Car Nicobar, where it stops at 2,000; but for coco-nuts it extends everywhere to very large figures, and even the Shom Pen have no difficulty in reckoning up to 80,000. A set of commercial scales will be found at p. 218 of the *Census Report*, 1901, and a detailed examination of the system of reckoning at p. 244.

The Nicobarese keep rough calendars by notches on wood. They reckon time by the monsoon season, or period of regular winds. Roughly the south-west monsoon blows from May to October, and the north-east from November to April, or for six months each. Two monsoons thus make a solar year, though the Nicobarese have no notion of such reckoning. Within a monsoon, time is approximately divided by moons or lunar months. Each moon is divided clearly into days, or as the Nicobarese reckon them *nights*, up to thirty, and more if necessary. As the monsoons do not fall exactly to time, but may be late or early, there is a rough and ready method of rectifying errors in reckoning, by a system of intercalary nights, when the moon cannot be

seen, and by cutting short the month to suit the moon. In talking with the Nicobarese, it has always to be borne in mind that they never reckon by the year, but always by the monsoon or half-year.

Communications.

All distant communications are by water; but on Car Nicobar good clear paths lead from village to village, and this is true to some extent of Chowra, Teressa, and Katchall. The sea distances have made the people expert in the feeling of direction, and, as among other Far-Eastern people, the points of the compass are thoroughly understood and constantly in mind. A Nicobarese always knows intuitively the direction north, south, east, or west of any object, action, condition, or movement at any time, and constantly so describes position in his speech.

Necessity has also compelled the Nicobarese to study the stars and winds to a limited extent. Their astronomical knowledge is strictly limited to actual requirements, while sailing or paddling at night in calm weather, and at neap tides from one island to another. Voyages are then made partly at night under star guidance, but steering by the stars is the old men's work. Young men fight shy of it, for fear of such uncanny knowledge shortening their lives or ageing them unduly. The study and knowledge of the winds is also strictly practical. The terms for the winds have no connexion whatever with the points of the compass, but relate generally to the territorial direction of the wind which will help canoes from one island to another.

Administration.

Internal affairs are regulated only by the village, each of which has a chief, often hereditary, and recognized elders. In the chief is vested the land, but he cannot interfere with ownership of houses and products, without the consent of the elders. Beyond a certain respect paid to him, and a sort of right to unlimited toddy from his villagers, the chief has not much power or influence, except what may happen to be due to his personality. The maintenance of the chiefs or 'captains' has been encouraged steadily by all the foreign suzerains for their own political convenience. The custom was started by the Portuguese in the seventeenth century, and has been carried on by the Danes, Austrians, and British in succession. In the eyes of the people a man so appointed by the foreign suzerain, unless a chief or elder naturally, is looked upon merely as an interpreter for communication with the suzerain, without any social standing or power. Other persons, besides the chief and the elders, who have acquired a certain political power are the witch-finders and sorcerers (*menluana*). Government is, in fact, simple democracy bound by custom. Property is everywhere safe. In Car Nicobar, where the villages are much the largest, the government and the land seem to be vested in the chief (*mätakkolo*) and three hereditary elders (*yomtundal*), who rule everything in council. All the village land is held from the council of

elders for cultivation by the people, who, however, give nothing for it beyond contributions at ceremonies.

In 1882, during the occupation as a Penal Settlement, a system of control over all the islands was started by means of making formal appointments of all chiefs as from the British Government. The chiefs thus appointed are, as far as possible, selected by the people themselves, but Government reserves to itself the power to depose any chief who misbehaves, and to appoint another in his place. The whole of the islands have now acquiesced in this procedure, and by its means an effective continuous control is maintained. Each chief receives a formal certificate of appointment, an annual suit of clothes, a flag (Union Jack), and a blank leather-bound book. All these he is bound to produce at every official visit to his village; and he undertakes to hoist the flag at the approach of every ship, to produce his book so that the commander may write in it any remarks, to report to official visitors all occurrences, especially smuggling, wrecks, and violent offences that have taken place since the last visit, and to assist in keeping order. On the whole, the chiefs perform their duties as well as might be expected from people of their civilization. In every other respect the people are left to themselves.

There is a Government Agent at Nancowry, whose duties are to assist the chiefs in keeping order, to collect fees for licences to trade in the islands, to give port clearances, to report all occurrences, to prevent the smuggling of liquor and guns, and to settle petty disputes among the people themselves, or between the people and the traders, as amicably as may be. Excepting the ceremonial 'devil murders' of Car Nicobar, there is scarcely any violent crime, and very few violent disputes occur with the traders, so that order and control are maintained with hardly any interruption. The 'devil murders' are dealt with directly from Port Blair.

[Rink: *Die Nikobarischen Inseln* (Copenhagen, 1847); translation in *Selections from the Records of the Government of India*, No. LXXVII, pp. 109–53.—Maurer: *Die Nikobaren* (Berlin, 1867); valuable bibliography, English, Danish, German, 1799–1863.—*Selections from the Records of the Government of India*, No. LXXVII (Calcutta, 1870); valuable bibliography.—Hochstetter: *Beiträge zur Geologie der Nikobar-Inseln, Reise der Novara, Geologischer Theil* ii, 85–112 (Vienna, 1866); translation in *Records of the Geological Survey of India*, No. IV, pp. 59–73, 1870.—V. Ball: 'Notes on the Geology, &c., in the Neighbourhood of Nancowry Harbour,' *Journal, Asiatic Society of Bengal*, vol. xxxix, pp. 25–9.—De Roepstorff: *Nicobarese Vocabulary* (Calcutta, 1875); valuable bibliography, French, Danish, German.—De Roepstorff: *Dictionary of the Nancowry Dialect* (Calcutta, 1884); valuable references to Danish works.—E. H. Man: *Dictionary of the Central Nicobarese*

Language (1889).—*Internationales Archiv für Ethnographie* (Leiden, 1893). Svoboda, 'Die Bewohner des Nikobar-Archipels'; continental bibliography.—Sir R. C. Temple: *Census Report*, 1901, *on the Andaman and Nicobar Islands* (1903).]

Nidugal.—Pointed hill, 3,772 feet high, in the north of Tumkūr District, Mysore, situated in 14° 9′ N. and 77° 5′ E. The lower part is surrounded with six lines of fortifications. In the ninth and tenth centuries it was held by the Nolamba chiefs of the Pallava family, whose capital was at Henjeru, now called Hemāvati. It then passed to the line of Chola chiefs under the Chālukyas, and the Hoysalas took it early in the thirteenth century. Under Vijayanagar rule, the Harati chiefs established themselves at Nidugal and held it until it was captured in 1761 by Haidar Alī, who made them tributary. Tipū Sultān later seized their possessions, and put an end to the line.

Nighāsan.—North-eastern *tahsīl* of Kherī District, United Provinces, comprising the *parganas* of Paliā, Khairīgarh, Nighāsan, Dhaurahrā, and Fīrozābād, and lying between 27° 41′ and 28° 42′ N. and 80° 19′ and 81° 19′ E., with an area of 1,237 square miles. Population increased from 279,376 in 1891 to 281,123 in 1901. There are 386 villages and two towns: DHAURAHRĀ (population, 5,669) and SINGĀHĪ BHADAURA (5,298), the former *tahsīl* head-quarters. Nighāsan, the present head-quarters, has a population of only 1,240. The demand for land revenue in 1903-4 was Rs. 2,81,000, and for cesses Rs. 45,000. The density of population, 227 persons per square mile, is the lowest in the District. The *tahsīl* contains 293 square miles of forest. It lies between the Sārdā or Chaukā on the west, and the Kauriāla on the east, and the whole area is liable to be swept by heavy floods. Besides these large rivers the Mohan forms the northern boundary, and the Dahāwar, a channel of the Chaukā, the southern. The Suhelī or Sarjū, another old bed of the Chaukā, crosses the northern portion. In 1903-4 the area under cultivation was 439 square miles; there is practically no irrigation.

Nihtaur.—Town in the Dhāmpur *tahsīl* of Bijnor District, United Provinces, situated in 29° 20′ N. and 78° 24′ E., 16 miles east of Bijnor town. Population (1901), 11,740. The town has a mean appearance, most of the houses being built of mud, but there is a handsome old mosque, to which three modern domes have been added. A few years ago a seditious organization was discovered here. It was known as the *Bāra Topī*, or 'twelve hats,' and resembled the Sicilian secret societies. Nihtaur is administered under Act XX of 1856, with an income of about Rs. 3,300. There is a little trade in dyeing, but the chief industry is sugar-refining. A middle school has 160 pupils, and two aided schools are attended by 52 boys and 40 girls.

Nijgarh.—Town in Dhenkānāl State, Bengal. *See* DHENKĀNĀL TOWN.

Nijgarh.—Town in Keonjhar State, Bengal. *See* KEONJHAR TOWN.

Nilambūr.—Village in the Ernād *tāluk* of Malabar District, Madras, situated in 11° 17′ N. and 76° 14′ E., on the road from Manjeri to the Nīlgiris by the Karkūr *ghāt*. Population (1901), 2,700. It is the head-quarters of the District Forest officer, South Malabar. The Nilambūr valley, which lies below the Camel's Hump range and the Kundahs and is drained by the Beypore river, contains the chief Government forest Reserves of South Malabar. They extend over more than 150 square miles on the slopes of the Kundahs and along the head-waters of the Karimpula river, and include 4,000 acres of excellent teak plantations started in 1843, the best logs of which fetch Rs. 2–8 per cubic foot in the market. There are also small plantations of rubber and mahogany. Gold-washing is still carried on to a very slight extent in the upper Nilambūr valley.

Nilanga.—*Tāluk* in Bīdar District, Hyderābād State, with an area of 315 square miles. The population in 1901, including *jāgīrs*, was 48,002. In 1891 the population was 59,148, the decrease being due to the famine of 1899–1900. The *tāluk* has 89 villages, of which 26 are *jāgīr*; and Nilanga (population, 3,343) is the head-quarters. The land revenue in 1901 was 1·6 lakhs. In 1905 the *tāluk* received a few villages from the Varvāl-Rājūra *tāluk*. Nilanga is composed chiefly of *regar* or black cotton soil. South and east lie the three *paigāh tāluks* of Partābpur, Bhālki, and Ghorwādi (population, 42,761, 20,784, and 35,178), containing 63, 21, and 56 villages respectively. BHĀLKI (5,788), the only town, is situated in the *paigāh tāluk* of the same name.

Nīleshwar.—Village in the south of the Kāsaragod *tāluk*, South Kanara District, Madras, situated in 12° 16′ N. and 75° 8′ E. The surrounding territory formerly belonged to a branch of the Chirakkal family of Malabar. The local Rājās offered considerable resistance to the Bednūr kings in the eighteenth century, and were assisted alternately by the French and the English. When the District finally fell to the Company in 1799, the Rājā accepted a pension, which is still continued. The village is now of little importance.

Nīlgiri State.—One of the Tributary States of Orissa, Bengal, lying between 21° 17′ and 21° 37′ N. and 86° 25′ and 86° 50′ E., with an area of 278 square miles. It is bounded on the north and west by the State of Mayūrbhanj, and on the east and south by Balasore District. One-third of the area is taken up by hills, some of which contain valuable timber. There is much land awaiting reclamation. Valuable quarries of black stone are worked, from which cups, bowls, platters, &c., are manufactured for export. Negotiations are in progress with a European firm for working the granite quarries in the State, and for connecting them by a light railway with the Bengal-Nāgpur Railway at Balasore. The origin of the State is obscure. According to tradition

it was founded by an adventurer from Chotā Nāgpur. It came into prominence during the Mughal period, and one of the chiefs was handsomely rewarded for the assistance he rendered to Akbar's Hindu general, Mān Singh, in subduing the refractory Pathāns. The State has an estimated revenue of Rs. 1,37,000, and pays a tribute of Rs. 3,900 to the British Government. The population increased from 56,198 in 1891 to 66,460 in 1901. The number of villages is 466, and the density is 239 persons per square mile. The most important village is Nīlgiri, containing the residence of the Rājā; this is picturesquely situated at the foot of a hill, 5 miles from the trunk road from Calcutta to Madras, with which it is connected by a good metalled road. Hindus number 58,896, Muhammadans 101, and Animists 7,302. The most numerous castes are Khandaits (15,000), Bhumijs (6,000), Brāhmans (5,000), and Gaurs and Hos (4,000 each). A small Christian community belonging to the American Free Baptist Mission is established at Mitrapur, 11 miles west of Balasore town. The State maintains one middle English school, 9 upper primary and 75 lower primary schools, and a dispensary.

Nīlgiris, The (*Nīlagiri*, 'the blue mountains').—A District in Madras, with the exception of Madras City the smallest in the Presidency[1], its area being only 958 square miles, or less than that of many *tāluks*. It lies between 11° 12′ and 11° 40′ N. and 76° 14′ and 77° E., and is bounded on the north by the State of Mysore; east and south-east by Coimbatore District; and west and south-west by Malabar. It consists of two well-marked divisions: the high, steep-sided plateau formed by the junction of the EASTERN and WESTERN GHĀTS as they run southwards down the two opposite sides of the Indian Peninsula; and a lower area adjoining, and geographically forming part of, the Malabar WYNAAD. The plateau, which is divided into the two *tāluks* of Ootacamund and Coonoor, averages 6,500 feet above sea-level, and several of its peaks run up to over 8,000 feet. It is upheld by great masses of hill, which from the plains present almost the appearance of a wall; and its summit consists chiefly of rolling grassy downs, divided by narrow valleys, at the foot of each of which is a bog or a stream. There is not a square mile of level ground on the whole of this area, and in the wrinkles of the hills nestle small but beautiful woods, known locally as *sholas*. The lower area adjoining the Wynaad forms the third, or Gūdalūr, *tāluk*, and is often called the South-east Wynaad. It is only 2,000 to 3,000 feet above the sea, is more level than the plateau, and is covered for the most part with thick forest.

Physical aspects.

Along the south-western edge of the plateau runs a line of bold hills

[1] Since this article was written, a very small District of ANJENGO, smaller than any of the existing Collectorates, was formed in 1906.

called the KUNDAHS, several of the peaks in which are over 8,000 feet in height. Among these is the well-known MAKURTI PEAK (8,403 feet), one side of which is almost sheer for several hundred feet. To the east, overlooking OOTACAMUND, the head-quarters of the District and the hot-season residence of the Madras Government, rises DODABETTA (8,760 feet), the second highest point in the Indian Peninsula. To the north the general level is lower, dropping gradually towards the plateau of Mysore.

The extreme west of the District, the lower area above referred to, drains for the most part towards Malabar by the Pandi, a tributary of the Beypore river. All the rest drains eventually into the Bhavāni. This river runs eastwards under the southern wall of the plateau in a deep and malarious valley, and is joined near the eastern limit of the District by the Moyār, which receives the drainage of the northern part of the plateau and forms for many miles the boundary between the District and Mysore State, running in a curious steep-sided trench known as the 'Mysore Ditch.' The Moyār rises on the slopes of Makurti Peak, and for the first part of its course across the plateau is known as the Pykāra. It drops into the lower country by the two beautiful Pykāra Falls, not far from NADUVATTAM in the north-west angle of the plateau, and is thereafter known as the Moyār.

Geologically, the high plateau of the District consists of a great mass of the charnockite series of hypersthene-bearing granulites, with a few later dikes of olivine-norites, well seen at Coonoor, from 1 inch to 10 feet wide. Where the level drops suddenly down in the west towards Malabar, an immediate change occurs; and typical Archaean biotite and hornblendic gneisses, with intrusive bands of charnockite and much younger biotite-granite, pegmatite, and basic dikes, make their appearance. The ruby, mica, and quartz-bearing reefs of this part of the District are referred to later under Minerals.

The altitude of the District naturally causes its flora to differ altogether from that of areas on the plains. Dr. Wight's *Spicilegium Neilgherrense* describes the more important of the plants found. The chief timber trees, indigenous and other, are referred to under Forests below. On the grassy downs occur several varieties of orchids; and wide stretches of land, especially in the neighbourhood of the Kundahs, are covered with *Strobilanthes*, which once in seven years bursts into a sheet of blue blossom and then dies down. The colours of its beautiful flowers vary from a pale, bright blue to a deep purple as the clouds drift over them, and form a most striking picture; they may have suggested the name 'Blue Mountains.' In the *sholas* grow rhododendrons, several species of ilex, *Elaeocarpus*, and *Eugenia* (the varied tints of the leaves of which render these little woods extremely beautiful in the spring), ferns of many varieties, bracken, tree-orchids with delicate blossoms, the hill gooseberry, blackberries of especial luxuriance, the

sweet-scented Nīlgiri lily, the alpine wild strawberry, and many other unusual and interesting trees and plants. English flowers (except roses, which seem to object to the high altitude) and vegetables flourish amazingly. Hedges in the gardens on the plateau are often made of heliotrope, fuchsia, and geranium, all of which grow into strong shrubs. English fruits are, however, less successful.

Of the large game found on the plateau the Nīlgiri ibex (*Hemitragus hylocrius*) is the most interesting, occurring only on these hills and a few other parts of the Western Ghāts farther south. Tigers and leopards often, and wild dogs occasionally, ascend the plateau from the lower slopes. *Sāmbar* are common in the *sholas* throughout the hills, especially in the Kundahs. Bison (*gaur*) and elephants are fairly common in the Benne Reserve and in the Mudumalai leased forest in the Lower Wynaad. The Nīlgiri Game Association, of which the Collector is usually the president and the District Forest officer the secretary, does much to prevent promiscuous shooting. It expends on watchers and other measures of preservation the income it derives from fees for shooting licences. Among rarer animals of the smaller kind may be mentioned the Nīlgiri *langur* (*Semopithecus johni*) and the Indian marten (*Mustela flavigula*). The hill-otter is fairly common on the banks of the Pykāra river, and Carnatic carp are numerous in the same stream, into which they were introduced in 1877. Efforts are now being made by the Game Association to stock the rivers with rainbow trout (*Salmo irideus*), all efforts to get the ordinary trout to breed having hitherto proved unsuccessful. Snakes are not so common as in the low country, but forty-five non-venomous and thirteen venomous species have been noted. Most of these, however, were seen in the Wynaad, and on the plateau these pests are rare. The District is especially rich in lepidoptera, and the Wynaad and the lower slopes of the hills near Mettupālaiyam are happy hunting-grounds for the entomologist.

Of migrant birds, the woodcock is fairly common on the plateau between the months of October and March. Snipe also visit the bogs at the bottom of the valleys. The edible-nest swift breeds in a few places, notably in the cave in Tiger Hill close to the toll-bar at the top of the *ghāt* road from Coonoor to Ootacamund.

The 'sweet half-English air' of the Nīlgiris has long been famous, and has led to the establishment on the plateau of the chief sanitarium of Southern India, OOTACAMUND, and the smaller stations of COONOOR, WELLINGTON, and KOTAGIRI. Ootacamund, the highest of these, enjoys an annual mean temperature of 57°, as compared with 83° at Madras, slight frosts occurring in the valleys at night in December and January. The climate has not, however, the invigorating qualities of the air of Europe, and is particularly unsuited to those who are liable

to dysentery or sluggishness of the liver. The lower slope of the hills, particularly the Bhavāni valley, and the Wynaad are feverish; especially so between March and May. With the burst of the south-west monsoon in June the malaria decreases, and the Wynaad then becomes comparatively healthy.

The annual rainfall of the Nīlgiris averages about 67 inches, but the distribution varies enormously according as each place is exposed or not to the full force of the south-west monsoon. All the western parts of the District receive most of their rain during this current, and on much of the plateau the five months from December to April are almost rainless. From its proximity to the west coast, the Wynaad gets the heaviest fall, the amount registered averaging 161 inches at Devāla and 90 inches at Gūdalūr. Naduvattam, the most westerly point of observation on the plateau, receives 102 inches and Ootacamund 49 inches. Coonoor receives 63 and Kotagiri 62. This heavy rain frequently washes away portions of the roads leading to the plateau, and when the rack railway to Coonoor was first opened it also suffered considerably. Experience has now rendered it possible to protect the places most exposed to landslips.

History.

Of the early history of the District nothing definite is known. It seems, however, probable that the Nīlgiris shared in the varied fortunes of the neighbouring District of Coimbatore. With the latter, it would appear to have become part of the dominions of the Naik kings of Madura during the second half of the sixteenth century. In the next century it seems to have passed under the Hindu kings of Mysore. Haidar Alī (who, during the second half of the eighteenth century, usurped the Mysore throne) and his son Tipū were apparently impressed with its strategical importance, for they strengthened such forts as it possessed to prevent raids from the Wynaad into Mysore and Coimbatore, which then belonged to them. The District fell to the share of the Company on the distribution of Tipū's possessions after his defeat and death at Seringapatam in 1799.

Apparently the first European to ascend the hills was a Catholic priest, who was sent up in 1602 by the Bishop of the Syrian Christians in Malabar on an evangelistic mission. Shortly afterwards, another party under a Jesuit priest named Jacome Ferrieri went up from Calicut, and the account of their adventures contains not a little information about the tribes of the hills and their manners and customs. The first Englishman to reach the top of the plateau was Buchanan, who went up in 1800 from Devanāyakkankota in the Bhavāni valley. In 1818 Messrs. Kindersley and Whish of the Civil Service went up on a shooting trip by much the same route; and their account of the pleasant coolness of the climate first attracted attention to the possibilities of the hills as a sanitarium to replace the Cape and Mauritius.

The next year Mr. John Sullivan, then Collector of Coimbatore, wen up to the plateau, and from that time forward he did everything in hi power to render it better appreciated and more accessible. In 182 Ootacamund was formally established as the sanitarium of the Presi dency. Mr. Stephen Rumbold Lushington, Governor of Madras be tween 1827 and 1832, had much to do with the opening up of the place. 'It will be the glory,' said a contemporary writer, 'of Mr. Lush ington's government, without extravagant hyperbole, that he introduce Europe into Asia, for such are his improvements in the Nīlgiris.'

Rude stone cairns and barrows abound on the plateau, situate usually in commanding situations on the summits of hills. A numbe of these, opened by Mr. Breeks, the first Commissioner of the Nīlgiri were found to contain burnt bones, pottery, iron knives, spear-head &c. The subject is discussed at length in his *Primitive Tribes a Monuments of the Nīlgiris*, and the finds he made form a valuab portion of the collection of prehistoric objects in the Museum Madras. The best bronzes and weapons were discovered in cair on the northern side of the plateau. Near Kotagiri are a number kistvaens, formed of large stone slabs enclosing a square space or va and surrounded by circles of single stones. Dolmens similar to t kistvaens, but built above-ground, occur in groups at Sholūr, Mel and a few other places on the plateau. Some of the older fune stone circles built by the aboriginal tribe of Todas have been opene and found to contain weapons, pottery, &c.

There are three old forts on the Nīlgiris—at Udaiyārkota, Hulik Durgam, and Mālekota. The last is situated 5 miles north-west Ootacamund near the *ghāt* road running to Sīgūr, and was utilized b Tipū Sultān, who named it Husainābād. In digging the foundation of Bishopsdown House at Ootacamund in 1827 a Roman gold coi was discovered. This, coupled with the fact that old gold-working have been discovered on the slopes of Dodabetta, seems to point t a very early settlement of traders and gold-diggers near Ootacamund In the Wynaad, antiquarian interest centres chiefly round the pre historic gold-workings found near Devāla. Some of the shafts ar 70 or 80 feet deep. Old forest trees are to be seen growing out o them. The existing caste of gold-workers are the Kurumbas, but the now confine themselves entirely to alluvial washing. There is said t be a tradition among them of an extinct tribe known as Vedahs, wh sunk the shafts in remote times.

Population.

The people of the Nīlgiris occupy an exceptional position in many ways In area the District is the smallest in the Presidency except Madra City, and in population it is altogether the smallest its inhabitants amounting to less than a fourth o those of Madras City. In 1871 they numbered only 49,501. I

1877 the South-east Wynaad was added to the Nīlgiris, and the population in 1881 increased accordingly to 91,034. In 1891 it numbered 99,797; and in 1901, 111,437. Even allowing for the increase due to the addition of the Wynaad, the growth in these thirty years has been at the rate of as much as 74 per cent., which is higher than any other District can show, although in the decade ending 1901 the decline, caused by the falling off in the coffee-planting industry, in the number of inhabitants of the Gūdalūr *tāluk* (16·8 per cent.) was greater than in any other *tāluk* in the Presidency. The rapid increase in the Nīlgiris as a whole, which still continues, is due to the expansion of the two hill stations of Ootacamund and Coonoor and the cantonment at Wellington, and to its complete exemption from famine, and has been largely caused by immigration from other Districts, notably Coimbatore. Of every 100 of the people living on the Nīlgiris in 1901, only 59 had been born within the District, while 29 had come from neighbouring tracts and 12 from non-contiguous areas. Nīlgiri District is still, however, the most sparsely peopled Collectorate in the Presidency.

It contains two towns, OOTACAMUND (population, 18,596), the head-quarters, and COONOOR (8,525). The Census at both these places was taken in the cold season before the numerous summer visitors and shopkeepers and their servants had arrived, and in the hot months their population is considerably larger. The District is divided into the three *tāluks* of OOTACAMUND, COONOOR, and GŪDALŪR, particulars of which according to the Census of 1901 are given below:—

Tāluk.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Ootacamund	440	1	17	37,998	86	+ 20·2	5,150
Gūdalūr	280	...	12	21,139	75	− 16·8	1,340
Coonoor	238	1	20	52,300	220	+ 22·2	6,426
District total	958	2	49	111,437	116	+ 11·7	12,916

Of every 100 of the population, 82 are Hindus or Animists, 5 are Musalmāns, and 13 Christians. Christians are proportionately more numerous than in any other District, and continue to be so even if all the Europeans and Eurasians among them (3,764) are left out of account. They have increased at the rate of 75 per cent. since 1881. The Nīlgiris contain proportionately fewer females than any other Madras District, there being only 84 to every 100 males. In the low country round Gūdalūr (the Wynaad), the chief coffee-planting centre, there are half as many males again as there are females, the lābourers

on the estates leaving their womenkind behind them when they come up from the plains. On the whole, Tamil is more spoken than any other vernacular. The District is, however, the most polyglot in the Presidency, eight different languages — Tamil, Badaga, Kanarese, Malayālam, Telugu, Hindustāni, English, and Kurumba, to give them in the order of the frequency of their occurrence—being spoken by at least 3 per cent. of the population. Badaga is a dialect of Kanarese spoken by the cultivating class of the same name, and Kurumba is the language of a forest tribe who live on the slopes of the hills. In the Coonoor and Ootacamund *tāluks* Tamil and Badaga are each the vernacular of between 30 and 40 per cent. of the people, while in Gūdalūr *tāluk* about a third of the people speak Tamil, a fifth Malayālam, and another fifth Kanarese.

Brāhmans are scarcer in the Nīlgiris than in any area except the Ganjām Agency, numbering only 7 in every 1,000 of the Hindu and Animist population. The five Hindu castes which are found in the greatest strength are Badagas (34,152), Paraiyans (19,429), Vellālas (4,501), Kurumbas (4,083), and Chettis (2,950). Three of these—the Paraiyan labourers, the Vellāla cultivators, and the Chetti traders—are Tamil immigrants from the low country. The other two have already been mentioned. Badagas hardly occur away from the Nīlgiri plateau; and though Kurumbas are found in several other Districts those of the Nīlgiris are quite distinct from their fellows, living the wildest existence in the jungles and speaking their tribal dialect, instead of talking Kanarese and subsisting by shepherding like the rest of the class. Two other tribes which are not found off the plateau are the Kotas and the Todas. The former are the artisans and musicians of the community; while the latter are a primitive pastoral people, who subsist upon the produce of herds of buffaloes, and owing to their unusual ways and customs (polyandry, for example) have attracted a great deal of attention among anthropologists. The latest contributions to the literature regarding these tribes are Mr. Thurston's *Madras Museum Bulletins* descriptive of them; and *The Todas*, by W. H. R. Rivers (1906).

The occupations of the people of the Nīlgiris are in several ways exceptional. They are less exclusively agricultural than those of any District except Madras City, only 61 per cent. living by the land. Of the remainder, unusually large proportions subsist by domestic service, building, commerce, the transport of merchandise, general labour, and the learned and artistic professions, while the cantonment at Wellington brings up the number of those who belong to the army to a figure above the normal. The ordinary native of the plain dislikes life on the cold plateau; and the cost of living there, necessitating warm clothing and a substantial house, is greater than in the low country

Consequently wages of all kinds rule very high, an ordinary unskilled labourer being able to obtain six annas a day.

There are 14,845 Christians in the District, of whom 11,081 are natives. Two-thirds of them are Roman Catholics, and about a fifth belong to the various Protestant sects. Apparently the first Protestant mission to start operations on the plateau was the Church Missionary Society, which built a chapel at Ootacamund in 1857 near St. Stephen's Church. The Society has now a church at Coonoor also, and uses the Government church at Gūdalūr. It has established 13 schools, which have 810 pupils, and its work among the hill tribes is confined chiefly to the Todas and Kurumbas. There is an American Mission chapel at Coonoor, with a resident catechist; and the Basel Lutheran Mission has established settlements at Kaity, Nirkambe, and Kotagiri, with schools at each place. The head-quarters of the latter are at Kaity, in a house in that valley which was originally built by Lord Elphinstone, Governor of Madras from 1837 to 1842, as a private residence for himself. The Roman Catholics have churches in Ootacamund and chapels at Gūdalūr and Naduvattam, and maintain eight schools.

Agriculture.

Owing to its elevation, agricultural conditions in the District differ considerably from those prevailing in other parts of the Presidency. The most fertile of all the soils is a rich black loam. On the plateau this is frequently of a dense, peaty nature, and the peat obtained from it is often used as fuel. The brown soil is the next in value. The yellow and red lands are both of inferior quality and require large quantities of manure to render them in any way productive, so they are chiefly used as grazing grounds.

In the Wynaad, cultivation of grain is almost entirely confined to the marshy, alluvial flats which occur among the low hills, and the heavy rainfall allows a considerable quantity of rice to be grown without irrigation. The soil is also so fertile that little manure is required. On the plateau only 'dry' (unirrigated) crops are raised. The best of these are found in the more sheltered areas to the east and south.

There are no *zamīndāris* or *inām* lands in the Nīlgiris, the whole area being held on *ryotwāri* tenure. In the Gūdalūr *tāluk* the sub-tenures resemble the peculiar varieties found in Malabar. Of the 958 square miles of the District, 500, or more than half, are covered with forest, and the extent actually cultivated is less than one-third of the whole. No portion is irrigated. Statistical particulars for the three *tāluks* in 1903-4 are given on the next page, in square miles.

The cultivation consists of that conducted by the planters (chiefly Europeans, whose attention is directed to the production of coffee, tea, and cinchona), and that carried on by the ordinary native ryots. More than half of it comes within the former category.

Tāluk.	Area shown in accounts.	Cultivated.	Cultivable waste.	Forests.
Ootacamund	440	80	6	309
Gūdalūr	280	108	64	105
Coonoor	238	119	17	86
Total	958	307	87	500

Coffee is the most important of the three crops grown by the planters. It was introduced in 1839 from the Malabar Wynaad. By 1863-4 there were about forty estates in various parts of the District. The OUCHTERLONY VALLEY was opened up between 1850 and 1860, and by 1876 the area under coffee in it exceeded 4,000 acres. At that time coffee commanded high prices in the home market, and the value of the crop of 1878-9 was estimated at over 1½ crores. Owing to the subsequent overstocking of the home market with Brazilian coffee prices have since fallen rapidly. The average price was £5 9*s.* 6*d.* per cwt. in 1891, but it fell to £2 13*s.* per cwt. in 1901. To add to the planters' embarrassments, leaf disease and the borer, an insect which eats into the heart-wood of the trees and speedily kills them, have ruined many properties. As a natural consequence, many coffee estates have gone out of cultivation. The area under coffee in the District in 1903-4 was returned as 26,000 acres, but a very large portion of this has been practically abandoned. More than half of it lies in the Coonoor *tāluk*.

The area under tea in 1903-4 was 8,000 acres, about equally divided among the three *tāluks*. Its cultivation has been steadily increasing. The plant was introduced in 1835, and in 1878 was grown on 4,200 acres. Like coffee-growing, the industry has suffered from over-production. At present there is a tendency to grow for quality rather than quantity; and fair prices are obtained for leaf cultivated and picked on scientific principles, though much of the profit is absorbed by middlemen and distributing agencies.

The introduction of the quinine-yielding cinchona from South America into India is due to the exertions of Sir (then Mr.) Clements Markham in 1860. The results of his experiments proved satisfactory; and in 1862 and 1863 the Madras Government started two plantations, one on Dodabetta and another, for species requiring a warmer and moister climate, at Naduvattam, on the north-western edge of the plateau above Gūdalūr. Later, two more plantations were started near Pykāra. The three existing plantations—Dodabetta, Naduvattam, and Hooker (so called after the celebrated botanist)—cover an aggregate area of 1,630 acres, of which 990 acres are under cinchona. The chief varieties cultivated are *C. officinalis* and *C. succirubra*, with their result-

ant hybrids. The quinine is manufactured at a factory at Naduvattam, and sold to the public at a low price through the agency of the post offices.

There are a number of private cinchona estates on the Nīlgiris, but the low prices for bark ruling from 1894 to 1899, which were again due to over-production, made the cultivation of the tree unprofitable; and many properties have now been converted into tea gardens. The area of private estates has fallen from 10,373 acres in 1891 to 3,200 acres in 1904. Some of them sell their bark to the Government factory.

Of the crops grown by the native ryots, the chief are the millet called *sāmai* (*Panicum miliare*), rice, *korali* (another millet, *Setaria glauca*), *rāgi* (*Eleusine coracana*), barley, potatoes, and some wheat. Rice is grown only in the Wynaad; and *korali*, barley, potatoes, and wheat only on the plateau. There is also much cultivation of vegetables and fruit for the Ootacamund, Coonoor, and Kotagiri markets, and 3,300 acres of private land have been planted with the blue gum-tree, which is used for firewood. *Korali*, *rāgi*, *sāmai*, barley, and potatoes are the staple foods of the lower classes on the plateau. The ryots are unprogressive and unenterprising, though careful and industrious. They evince but little inclination to avail themselves of the Loans Acts. Only Rs. 4,900 has been advanced under the Land Improvement Loans Act, and only Rs. 12,700 under the Agriculturists' Loans Act. In the Wynaad no advances at all have been taken.

The indigenous cattle of the District are of an inferior description, owing firstly to a curious lack of nourishment in the natural grasses (it is said that there is not enough lime in the soil), and secondly to the long dry weather from January to April, during which a hot sun in the day and slight frosts at night combine to kill off the pasture. The best animals are those imported from Mysore. The buffaloes maintained by the Todas for the sake of their milk are, however, very fine beasts, being much larger than those of the plains, and carrying wide curved horns of a peculiar shape.

A miserable breed of pack ponies is raised in the District, but these animals are useful in a country where the unevenness of the ground makes cart-roads a luxury. Sheep and goats are not kept to any great extent, and efforts to introduce English sheep have not so far been successful. The Berkshire breed of pig has been crossed with the Chinese variety with success, but it is difficult to cure bacon and hams properly owing to the absence of real winter weather. Horses have been bred for some years at a private establishment at Masnigudi, and some success has been met with. Experiments in mule-breeding were made near Sīgūr, but have now been abandoned.

The forests and plantations are of two classes, which differ widely

in character. There are, first, the Reserves and plantations on the plateau, consisting of exotics and indigenous evergreen trees; and, secondly, the deciduous forest on the slopes of the hills and in the Wynaad. The natural woods or *sholas* on the plateau consist of patches of slow-growing trees and evergreens of little commercial value. In the deeper valleys trees in these are often of considerable size; but on the wind-swept downs the growth is gnarled and stunted, and of little use except as cover for game.

Forests.

The Government recognized at an early date that the indigenous supplies would require to be supplemented, to meet the growing demand for firewood and building timber in the sanitaria which sprang up on the plateau; and as early as 1856 experiments in the planting of exotic timber were instituted at Jakatala near Wellington. The first plantations were chiefly of Australian acacias, but it was soon seen that the eucalyptus yielded better results than any other species. The Australian black-wood (*Acacia melanoxylon*) grows very freely and is a characteristic tree of the stations on the plateau, and the same may be said of the yellow-flowered Australian wattle. This latter is, indeed, becoming a nuisance, as it is of little commercial value and spreads amazingly.

The oldest eucalyptus plantation at Ootacamund is that known as Aramby, along the western and northern slopes of the Club Hill. This was put down in 1863 and the following years. In 1878 careful experiments were conducted by the Forest department, to ascertain whether the area planted with eucalyptus was sufficient to meet the requirements of the towns on the plateau, and the results were reassuring. The present supply is, indeed, more than equal to the demand. The chief species worked is *E. globulus*, and dépôts are maintained for its sale to the public. The total area at present planted with eucalyptus and other exotics on the plateau is 3,075 acres, of which 1,696 acres are in the neighbourhood of Ootacamund and 1,379 acres near Coonoor and Wellington.

The forests on the slopes of the hills and in the Wynaad comprise the three large Reserves of Mudumalai, Benne, and Sīgūr. The first of these, which was leased from a native proprietor (the Tirumalpād of Nilāmbūr) in 1862, contains a quantity of teak, black-wood (*Dalbergia latifolia*), bamboo, and other trees of commercial value. In Benne forest the growth of teak is even finer, owing to the heavier rainfall. There is a Government plantation of this tree, 244 acres in extent, in this forest, but the absence of any railway renders it difficult to get the timber to remunerative markets. The Sīgūr forest is about 40 square miles in extent, including a sandal-wood area of 2,000 acres from which a moderate revenue is derived. The other timber trees in this Reserve are of inferior growth and quality.

Minerals.

The Nīlgiris contain iron, kaolin, mica, and gold-bearing quartz. The iron occurs in large masses at Karrashola near Kotagiri, but the absence of fuel in the neighbourhood renders it of no commercial value. Kaolin is found in several places on the plateau, but is said to contain too much iron to be of economic importance. In the Wynaad mica and gold-bearing quartz reefs occur in abundance. The attempts to establish a gold-mining industry there on a remunerative basis have hitherto proved unsuccessful. The glowing reports of experts led to the great boom of 1880, when numerous companies, with an aggregate capital of over four millions sterling, were floated on the London market. The results of crushings gave returns so much smaller than had been anticipated that the boom was followed by the equally severe depression of 1884, which led to the winding-up of nearly all the companies interested before anything had been achieved. Costly machinery sent out from England was in many cases never erected, and remains overrun by jungle or lying on the roadside to this day. A recent attempt by a local syndicate to employ the improved methods of extraction since invented has also failed to pay. Investigations lately undertaken by Messrs. Hayden and Hatch of the Geological Survey of India go to show that 'with the methods at present available for the treatment of low-grade ores, there is no hope of gold-mining in the Wynaad becoming remunerative[1].' Mica occurs throughout the Wynaad and particularly in the granitic rocks near Gūdalūr; but all efforts to extract it in sufficiently large sheets to make it commercially valuable have also, up to the present, proved unsuccessful.

Trade and communications.

The only native industry in the District is the manufacture by the Kotas of rough knives, billhooks, earthenware vessels, &c., for the Badagas and Todas. The Kotas are the only artisan caste on the plateau, and are usually paid in kind for their productions.

Among large industries brewing is the most important, and four breweries are now at work. The Castle Brewery at Aravanghāt was started in 1859, and its present annual out-turn is about 80,000 gallons; the Nīlgiri Brewery, Ootacamund, originally known as the Murree Brewery, has an out-turn of 131,000 gallons; the Rose and Crown Brewery at Kaity was established in 1895 and has lately been taken over by a syndicate; and the British Brewery is a small concern recently started at Ootacamund. The Castle Distillery at Aravanghāt, opened in 1886, produces 11,000 gallons of spirit annually.

The Government cordite factory near Wellington consists of two parts: the power works at the foot of the Kārteri Falls, the water of which is utilized to generate electrical power for working the

[1] *Memoirs, Geological Survey of India*, vol. xxxiii, part ii.

machinery; and the factory itself, situated some distance off in the Aravanghāt valley. The buildings belonging to the latter already form a small town, and operations have now been begun.

There are three soda-water factories at Ootacamund, two at Coonoor, and one at Wellington. Eucalyptus oil is distilled in bulk by a firm in Ootacamund, the annual output being about 500 gallons. There is a tea factory at Devarashola in the Wynaad, and four others on the plateau at the Liddlesdale, Curzon, Glendale, and Kodanād estates. Sulphate of quinine and febrifuge are made in large quantities at the Government factory at Naduvattam from the bark of cinchona grown on the Government plantations and on private estates. The factory has been at work since 1889, and it and the plantations are managed by a special officer called the Director of Government Cinchona Plantations. It supplies the quinine used in public hospitals, not only in this Presidency but in several other Provinces and Native States. Cheap quinine has been brought within the reach of the poorer classes by what is known as the pice-packet system, which was started in 1892. Under this, 7-grain (formerly 5-grain) powders are sold for a quarter-anna (or 3 pies) each at all post offices. The great increase in the sale of these packets shows how much they are appreciated, and the net profits of the work at the Government Cinchona Plantations and the factory since they were started have amounted to about 15 lakhs.

The Nīlgiris do not produce enough food to support the large foreign non-agricultural population. The area under cereals is only 29,000 acres, and it has been calculated that the average out-turn is not equal to more than four months' supply. Consequently large quantities of rice and *rāgi* are imported from Mysore State through Gūdalūr, and from Coimbatore District by the *ghāt* road and the rack railway which start from Mettupālaiyam.

Well-attended markets are held once a week at Ootacamund, Coonoor, Kotagiri, and Gūdalūr. The last of these supplies the Wynaad and the Ouchterlony Valley.

The principal exports of the District are coffee, tea, cinchona bark, quinine, eucalyptus oil, and beer. Many of the Wynaad products go down to Calicut. Musalmāns control the greater part of the trade.

The only railway within the District is the rack railway from Mettupālaiyam, at the foot of the hills in Coimbatore District, to Coonoor. Work on this was started in 1891; but in 1895 the original company went into liquidation, and the assets and concession were taken over by a syndicate in London who soon raised the capital required for its completion. The line was opened for traffic with Coonoor in 1899, and is now worked by the Madras Railway Company under an agreement with the Nīlgiri Railway Company. The line is of metre gauge on the Abt system, which is an improved rack-rail modification of the

Rigi principle. It is 16¾ miles long, with a gradient of 1 in 12½ for the last 8¾ miles. The extension of this line to Ootacamund (11½ miles) is now being completed, arrangements being made to render it available for the new cordite factory near Wellington. The terminal station at Ootacamund will be in the centre of the town in the Mettucherri valley.

The total length of metalled roads in the District is 145 miles, and of unmetalled roads 479 miles. Of the former, 20 miles are under the charge of the Public Works department, and all the rest are maintained by the District board. Avenues of trees are not needed in this temperate climate, and only 18 miles of road are provided with them. Ootacamund is the centre of the road system, and from it lines run to the various *ghāts* leading off the plateau. Of these the most important is that from Mettupālaiyam to Coonoor, which was built in 1833 and realigned in 1871. From Mettupālaiyam another *ghāt* leads northwards up to Kotagiri, but is little used except by passengers and traffic connected with coffee and tea estates in the neighbourhood of Kotagiri. On the north the Sīgūr *ghāt* gives access to Mysore, but the road is steep and most of the Mysore traffic comes by way of the Gūdalūr *ghāt*. At the ninth mile from Ootacamund along this a road branches to the north, leading to the Pykāra Falls and the tea and cinchona estates at the north-west corner of the plateau. From Gūdalūr a good road runs to the north-east, connecting this line with the Sīgūr route near Teppakādu. From the same place other roads run north-west to Sultān's Battery in the Malabar Wynaad, and west, through Devāla and Cherambādi, to Vayittiri and to Calicut on the west coast; and a branch goes south-west, via Nādgāni and Karkūr, to Nilambūr in the plains of Malabar. The old route from Malabar to the hills was by the Sispāra *ghāt* at the south-west corner of the plateau, but it was always very malarious and is now abandoned and overgrown with thick jungle. On the plateau, besides the main roads already mentioned, a good gravelled road runs from Ootacamund to Kotagiri and thence to Kodanād, and another to Devashola and Melūr. From Devashola a road runs east to Coonoor through Kārteri. Coonoor and Wellington are also connected with Kotagiri by a good road.

Actual famine is unknown in the Nīlgiris, but high prices caused by scarcity in the low country occasionally cause distress among the poorer classes in the towns.

Administration.

Up to 1830 the Nīlgiris formed part of Coimbatore District. A portion of the plateau was transferred in that year to Malabar, but was retransferred to Coimbatore in 1843, and the Nīlgiris remained a *tāluk* of the latter District till 1868. The plateau was then constituted a separate District under a Commissioner

and Assistant Commissioner, in whose hands was placed the whole of the judicial work, both civil and criminal, as well as the revenue administration. In 1873 the Ouchterlony Valley was added to the District, and in 1877 the South-east Wynaad was transferred from Malabar and became the Gūdalūr *tāluk*. In 1882 the administrative machinery was reorganized and assimilated to that in other Districts. The Commissioner was replaced by a Collector, and the Assistant Commissioner became a Head Assistant Collector.

The Nīlgiris comprise only three *tāluks*: namely, Ootacamund, Coonoor, and Gūdalūr. The first and last of these form the charge of the Collector, while Coonoor is administered by the divisional officer, whose head-quarters, formerly at Devāla, were in 1905 transferred to Coonoor. Deputy-*tahsīldārs* are in charge of Ootacamund and Gūdalūr, and a *tahsīldār* of Coonoor. Coonoor has also a stationary sub-magistrate. Unlike other Districts, the Nīlgiris have no separate Executive Engineer. Public works in the Ootacamund and Coonoor *tāluks* are in charge of the Engineer of Coimbatore, those in the Gūdalūr *tāluk* are included in the Malabar Executive Engineer's division, while the public buildings in Ootacamund town are looked after by the Consulting Architect.

For civil judicial purposes the Nīlgiris are included in the jurisdiction of the District Judge of Coimbatore. In addition to the usual village Munsifs, there are two courts of original jurisdiction, those of the Subordinate Judge of Ootacamund and of the District Munsif of Gūdalūr, the latter officer being the deputy-*tahsīldār*. The former court exercises jurisdiction over the whole District, and hears appeals from the decisions of the District Munsif.

For purposes of criminal justice the District is similarly included in the Coimbatore Sessions division. The Collector is, however, invested with the powers of an Additional Sessions Judge, and tries certain classes of sessions cases defined by executive order. Others are committed for trial to the Sessions Court at Coimbatore. The Subordinate Judge, the Treasury Deputy-Collector, and the divisional officer are usually first-class magistrates.

Crime is light outside the two municipal towns. Dacoities and robberies are very rare. Coffee-stealing was formerly prevalent in the Wynaad; but the great decline in the coffee industry, coupled with special police measures, has led to the practical disappearance of this form of crime. On the other hand, the number of offences committed in the larger towns is great, and, judged by the proportion of them to the population, the District is as criminal as any in the Presidency.

The Nīlgiris were included in the settlement of Coimbatore District (of which they then formed part) undertaken by Major McLeod in 1799. The fifteen rates of assessment fixed as the result of that settle-

ment remained in force until 1862, when, owing to the increased demand for land by European planters and others, attention was directed to the evils arising from certain curious customary privileges enjoyed by cultivators on the hills. The first of these was the *bhurti* (or shifting) system, under which a *patta* (the document given by Government to occupiers, setting out the land they hold and the assessment payable upon it) was regarded not merely as entitling its holder to cultivate the plot specified therein, but as permitting him to shift from one place to another, and to retain without payment a preferential lien on plots formerly tilled by him, which he could return to and cultivate in rotation. Another concession enjoyed was the *aiyan* grass or fallow privilege, under which a ryot was permitted to retain a portion of his holding, not exceeding one-fifth, as fallow, on payment of only one-fourth of the ordinary assessment. A third peculiarity was the *parava pillu vari*, or grazing privilege, which allowed extensive areas to be held as grazing land on a very low assessment.

In 1862 the Government determined to abolish the *bhurti* system, and to require the ryot to pay assessment for all the land which he was entitled to cultivate. The fifteen rates of assessment were abolished and five simple rates were substituted. At the same time the Government abolished a peculiar system in vogue in the Kundahs, under which the so-called *patta* issued to the ryot was no more than a licence to him to use a certain number of ploughs or hoes, and left unstated both the extent and the position of the lands to be cultivated. These changes were followed in 1863 by the introduction of the Waste Land Rules, which not only struck the final blow at the *bhurti* system, but also disposed once for all of the vexed question of the rights of the Todas over lands on the hills.

The position of the Todas as the earliest occupants of the plateau had during the first half of the century given rise to a claim on their behalf to lordship over the hills. After much discussion it was decided by the Court of Directors in 1843 that no proprietary right over the soil, such as would interfere with the right of Government, could be admitted. This decision remained in force with certain modifications until the Waste Land Rules were introduced in 1863. The principle was then enunciated, that all lands are waste in which no rights of private proprietorship or exclusive occupancy exist. The Todas were, however, secured from interference in the enjoyment of their *mands*, the collections of curious wagon-roofed huts in which they reside, and 11 acres of land were set apart round each *mand* for the grazing of their cattle. The amount was increased to 34 acres in 1863. The land thus set apart is now regarded as the inalienable property of the Toda community.

Under the Waste Land Rules of 1863, land was sold subject to an

assessment of Rs. 2 per acre for forest and R. 1 per acre for grass land. The assessment on grass land was subsequently reduced to 8 annas; and the rules have been further relaxed by the exemption from assessment, for five years after purchase on the plateau and three years in the Wynaad, of land on which certain special products are to be raised.

A detailed survey was begun in 1878, and in 1881 the settlement of the plateau was undertaken, which was completed in 1884. The four old *nāds*, or divisions, were arranged into thirty-six revenue villages, and proper village establishments were organized. No attempt was made to follow the usual method of settlement based on a classification of soils. The assessment was made under special rules adapted to the peculiar circumstances of the country. The average rate of assessment per acre for the whole District, which included house sites in Ootacamund assessed at Rs. 10 per acre and mining land rated at Rs. 5, amounted to nearly 11 annas. The rates varied little from those fixed at the settlements of 1799 and 1862; but the enormous increase discovered by the survey in the occupied area, together with fresh grants made at the settlement, resulted in raising the revenue demand by Rs. 35,000, or 104 per cent. The settlement of the Wynaad was completed separately in 1887. The tenures in this part of the District resemble those in Malabar, the land for the most part being the *janmam* property of certain large owners, who may cultivate or lease it subject to the payment of the assessment to the Government. Of the twelve villages formed at the settlement out of the three *amsams* or parishes of Nambalakod, Munanād, and Cherankod, eight are still held by private *janmis*; in the remaining four the *janmam* right has by process of escheat vested mainly in the Government. In the tract of land between the foot of the Sigūr *ghāt* and the Moyār river, forming the settlement village of Masnigudi, the ordinary *ryotwāri* tenure is in force.

The revenue from land and the total revenue in recent years are given below, in thousands of rupees :—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . .	54	1,67	1,48	1,72
Total revenue . .	3,63	5,96	6,24	7,69

Outside the two municipalities of Ootacamund and Coonoor, local affairs are managed by the District board, composed of sixteen members. Wellington is a military cantonment, under its own cantonment committee. No *tāluk* boards or Unions have been established. The income of the District board in 1903-4 was Rs. 1,73,000. Of this, about Rs. 1,19,000 was contributed by Government from Provincial revenues, the receipts derived from the land cess (Rs. 16,000)

even when added to the large income from tolls (Rs. 34,000), being insufficient to provide for the maintenance of the great length of roads through difficult country which the District possesses. In the same year the maintenance of these cost Rs. 96,000.

For purposes of police administration the Nīlgiris are attached to Coimbatore, and form part of the charge of the Superintendent of police of that District. An Assistant Superintendent stationed at Ootacamund holds immediate charge of the District. The total sanctioned strength of the force is 190 men, distributed among 14 police stations and supervised by 3 inspectors, besides 44 village policemen.

There are 3 subsidiary jails—at Ootacamund, Coonoor, and Gūdalūr—which provide accommodation for 65 prisoners. Long-term convicts are sent to the Central jail at Coimbatore.

In regard to education the Nīlgiris stand second among Madras Districts, about 12 per cent. of the inhabitants (17 males and 5 females) being able to read and write, and 5 per cent. of them knowing English. Education is, however, backward in the Gūdalūr *tāluk*. The total number of pupils under instruction in 1880–1 was 1,534; in 1890–1, 2,938; in 1900–1, 4,520; and in 1903–4, 4,636. On March 31, 1904, there were in the District 88 educational institutions of all kinds, of which 84 were classed as public and 4 as private. The former included 16 secondary and 67 primary schools, and one training school, and the number of girls in them was 908. Of the public institutions 2, the male and female branches of the Lawrence Asylum, are controlled by a committee working under Government, 3 are maintained by the municipalities, and 14 by the District board. It is noteworthy that all the secondary schools for boys are English schools, most of them being attached to missionary institutions. The single training school (for masters) is conducted by the Basel Lutheran Mission at Kaity, but is aided by Government. Of the male population of school-going age, 35 per cent. were in the primary stage of instruction, and of the female population of the same age 10 per cent. The corresponding figures for Musalmāns were 48 and 24 per cent. respectively. There are 34 schools for Badagas at which 1,078 pupils received instruction in 1903–4, 3 schools for Kotas with 53 pupils, and one for Todas with 14 pupils. For Panchamas, or depressed castes, 10 schools are maintained, at which 391 boys and 107 girls were under instruction. The Breeks Memorial school at Ootacamund, instituted in 1874 in memory of the first Commissioner of the Nīlgiris, has undergone many vicissitudes and is now managed by the Educational department as a Government school for Europeans and Eurasians. The endowment is vested in the Treasurer of Charitable Endowments. At Coonoor a school was established by Mr. Stanes in 1875 for Europeans and

Eurasians. The Lawrence Asylum at Lovedale is intended as a home and training school for the children of European soldiers who have served in the Madras Presidency. It was started in 1858, with funds contributed as a memorial to Sir Henry Lawrence, and in 1860 its control was transferred to Government. In 1871 the Male Military Orphan Asylum, previously established at Madras, was amalgamated with it and the combined institution moved into the present buildings at Lovedale. In 1904 the Madras Military Female Orphan Asylum was similarly amalgamated with the girls' branch of the Lawrence Asylum. The Asylum now consists of two branches, male and female, under a head master and a head mistress respectively. In addition to an ordinary elementary education, the pupils receive practical teaching in technical and industrial subjects to qualify them to earn a livelihood when they leave. The income of the institution amounts to about Rs. 1,61,000, of which Rs. 48,000 represents the grant-in-aid from Government, Rs. 59,000 interest on investments, and Rs. 24,000 the profit derived from the Lawrence Asylum Presses at Madras and Ootacamund. The total expenditure on education in the District in 1903–4 was Rs. 1,02,000, of which Rs. 10,500 was met from fees; and Rs. 52,000 of the total was devoted to primary education.

The medical administration is in charge of the District Medical and Sanitary officer stationed at Coonoor, Ootacamund forming the separate charge of a Civil Surgeon. Besides the hospital at the Lawrence Asylum, which is intended only for the inmates of that institution, four civil hospitals are maintained at Ootacamund, Coonoor, Kotagiri and Gūdalūr, and a dispensary at Pykāra. There is accommodation in all these buildings for 149 in-patients. In 1903 medical relief was afforded to 36,000 persons (of whom 1,800 were in-patients) and more than 700 operations were performed. The institutions at Ootacamund, Coonoor, and Gūdalūr contain separate accommodation for Europeans, and at Ootacamund and Gūdalūr wards for the police are also provided. There is a military hospital at Wellington with 180 beds. The total expenditure in 1903 was Rs. 52,000, which was met in almost equal shares by grants from Government, Local and municipal funds, and donations and subscriptions.

Vaccination is compulsory only in the two municipalities. In 1903–4 the number of persons successfully vaccinated was 42 per 1,000, compared with an average for the Presidency of 30.

[Further particulars of the Nīlgiris will be found in the *Manual* of the District (1880), by H. B. Grigg.]

Nilphāmāri Subdivision.—North-western subdivision of Rangpur District, Eastern Bengal and Assam, lying between 25° 44′ and 26° 19′ N. and 88° 44′ and 89° 11′ E., with an area of 648 square miles. The subdivision, which is bounded on the east by the Tīsta

is a level strip of country, containing large sandy plains alternated with low loam and clay rice lands. The population in 1901 was 461,314, compared with 447,764 in 1891. It contains three towns, NILPHĀMĀRI (population, 2,396), the head-quarters, SAIDPUR (5,848), an important railway centre, and DOMĀR (1,868); and 370 villages. The density is 712 persons per square mile. The subdivision is healthy, and the cultivation of tobacco and sugar-cane is extending.

Nilphāmāri Town.—Head-quarters of the subdivision of the same name in Rangpur District, Eastern Bengal and Assam, situated in 25° 58′ N. and 88° 51′ E. Population (1901), 2,396. It is a station on the Eastern Bengal State Railway. The town contains the usual public offices; the sub-jail has accommodation for 18 prisoners.

Nilvāla.—Petty State in KĀTHIĀWĀR, Bombay.

Nīmach.—Town and British cantonment in the Mandasor district of Gwalior State, Central India, situated in 24° 28′ N. and 74° 54′ E., on the Ajmer-Khandwā branch of the Rājputāna-Mālwā Railway. The total population in 1901 was 21,588, of whom 6,190 resided in the native town and 15,398 in the cantonment. The town stands on a barren basaltic ridge, capped with laterite, 1,613 feet above sea-level, and the cantonment lies close by. The houses of the better classes in the town are all built of limestone, which is quarried in the neighbourhood, and exported in large quantities. Grain, opium, and cotton form the other staple commodities of trade. The *pargana* offices, a jail, a State post office, a school, and a hospital are located in the town; and the cantonment contains branches of the Canadian Presbyterian, the Rev. Handley Bird's, and Panditā Rāma Bai's missions. In 1817 land was taken up to form a standing camp for the British troops engaged in putting down the predatory bands of Pindāris which were then ravaging the country. The following year further land was acquired and a small fort built; and in 1822 Nīmach became the head-quarters of the combined Rājputāna-Mālwā Political Charge under Sir David Ochterlony, who was Resident till 1825. The Residency, now used as a club, was built during this period. The surrounding country was included in the tract assigned for the maintenance of the Gwalior Contingent in 1844, but was restored to Sindhia in 1860.

In 1857 Nīmach was the centre of the disturbances in Mālwā. The cantonment was then held by a battery of native horse artillery, the 1st Bengal Cavalry, 72nd Native Infantry, and 7th Infantry, Gwalior Contingent. Signs of unrest appeared early among the men of the Contingent, and on the night of June 3 the troops rose. The Europeans, except one sergeant's wife and her children, fled in safety to Jāwad, which they were, however, obliged to vacate soon after. Ultimately the women and children escaped to Udaipur, where they were sheltered by the Mahārānā. The officers returned to Nīmach, and

occupied the fort, assisted by some native troops. The garrison was hard pressed by the pretender Fīroz Shāh from MANDASOR, until it was finally relieved by the Mālwā Field Force on November 24, 1857. On the constitution of the Mālwā Agency in 1895, Nīmach was selected as the head-quarters of the Political Agent.

Nimār District.—District in the Nerbudda Division of the Central Provinces, lying between 21° 5′ and 22° 25′ N. and 75° 57′ and 77° 13′ E., and occupying a strip of mixed hill and plain country at the western extremity of the Narbadā valley and of the Sātpurā plateau, abutting on Khāndesh and the Central India States. It is bounded on the north by the States of Indore and Dhār; on the west by Indore and the Khāndesh District of Bombay; on the south by Khāndesh and the Amraoti and Akola Districts of Berār; and on the east by Hoshangābād and Betūl. The present District includes only a small portion of the old historic division of Prānt Nimār, which comprised the whole Narbadā valley from the Ganjāl river on the east to the Hiranpāl or 'deer's leap' on the west, in both of which places the Vindhyan and Sātpurā ranges run down to the river. The name is considered to be derived from *nīm*, 'half,' as Nimār was supposed to be half-way down the course of the Narbadā; but in reality the District is much nearer to the mouth than to the source of the river. It may be broadly described as comprising a portion of the Narbadā valley in the north and of the Tāpti valley in the south, divided by the Sātpurā ranges crossing the District from west to east. The Narbadā forms the northern boundary of the District for most of its length, but the two forest tracts of Chāndgarh and Selāni lie north of the river. The bed of the Narbadā during the first part of its course in the District is hemmed in by high cliffs of basalt to the north and a network of ravines to the south. At Punāsa it passes over a fall of about 40 feet in height, and 12 miles below this lies the sacred island of Māndhāta, where the hills open out and an alluvial basin commences. About 25 miles south of the Narbadā a low range of foot-hills, commencing on the western border of the Khandwā *tahsīl*, traverses the District diagonally until it abuts on the river in the extreme north-east. The country lying between this range and the Narbadā is broken and uneven, and covered with forest over considerable areas. South of it lies the most fertile area of the District, comprised in the valleys of the Abnā and Suktā rivers. Both of these have an easterly course, and are tributaries of the Chhotā Tawā, which flows from south to north to join the Narbadā. This part of the District is open, and contains no forest or hill of any size; but the surface is undulating, and small valleys with a central stream fringed by palms, *mahuā* (*Bassia latifolia*), and mango-trees, alternate with broad ridges, some comparatively fertile, others bare and stony. To the south the

Physical aspects.

main range of the Sātpurās crosses the District with a width of only about 11 miles and a generally low elevation, from which a few peaks, including that of Asīrgarh, rise conspicuously. Between this range and another to the south the Tāpti has forced a passage, and after passing through a cleft in the hills emerges into two open basins separated by the isolated hill of Samardeo. The upper of these, though fertile, is almost uncultivated; but in the lower, in a small plain of deep alluvial deposit, stands the town of Burhānpur. South of the Tāpti rises a higher ridge forming the southern face of the Sātpurās, and separating Nimār from the Berār plain. These hills are the highest in the District, and one or two of the peaks rise to over 3,000 feet. The Khandwā plain has an elevation of about 1,000 feet above the sea, and that of Burhānpur about 850 feet.

Throughout the District, except in a few spots near the Narbadā, the geological formation is the trap rock of the Deccan, which here appears to be of enormous thickness. Near the Narbadā, sandstones, limestones, and other strata appear in places, but generally the trap is everywhere the surface rock. In the neighbourhood of the Narbadā it sometimes assumes the form of columnar basalt, forming regular polygonal pillars.

Where not under cultivation, the ridges and hills are covered with jungle—sometimes a uniform thin forest of *salai* (*Boswellia serrata*), with little grass and undergrowth; at other times of a general character, the principal species being teak, *sāj* (*Terminalia tomentosa*), and *anjan* (*Hardwickia binata*). This last is the commonest tree in the District. Bastard date-palms are numerous in the open country. A number of grasses occur, the most important from a commercial point of view being *rūsa* or *tikāri* (*Andropogon Schoenanthus*), from which a valuable oil is obtained.

Tigers and leopards are found. *Sāmbar*, spotted deer, and gazelle are fairly numerous. A few bison are found in the forests north of the Narbadā and the Tāpti valley, but they are not permitted to be shot. Numerous herds of wild dogs are very destructive to the game. Of game-birds, peafowl, quail, painted partridge, and sand-grouse are the chief.

The climate is healthy; and although the heat is severe during the summer months, the light rainfall and cool winds make the monsoon season pleasant.

The annual rainfall averages 32 inches, and, though the lightest in the Province, is excellently adapted to the rains crops of millet and cotton which are principally grown in the District.

Situated on the main route between Hindustān and the Deccan, and containing the fortress of Asīrgarh which commands the passage of the Sātpurās, Nimār has been at several periods of history the

theatre of important events. In early times the country is believed to have been held by the Chauhān Rājputs, from whom the present Rānā of Piploda claims descent. In 1295 Alā-ud-dīn, returning from his bold raid into the Deccan, took Asīrgarh, and put all the Chauhāns to the sword, except one boy. Northern Nimār about this time came into the possession of a ruler belonging to the Bhilāla tribe, who are believed to be a mixed race of Rājputs and Bhīls. The chiefs of Māndhāta, Bhāmgarh, and Selāni trace their descent from the Bhilāla rulers. About 1387 it became subject to the Muhammadan Sultāns of Mālwā, whose capital was at Māndu on the crest of the Vindhyan range. In 1399 Nāsir Khān Fārūki, succeeding his father, who had obtained a grant of southern Nimār from the Delhi emperor, assumed independence, and established the Fārūki dynasty of Khāndesh. He captured Asīrgarh, and founded the cities of Burhānpur and Zainābād on the opposite banks of the Tāpti in honour of two Shaikhs. The Fārūki dynasty held Khāndesh with their capital at Burhānpur for eleven generations until 1600, in which year both Nimār and Khāndesh were annexed by the emperor Akbar, who captured Asīrgarh by blockade from Bahādur Khān, the last of the Fārūkis. Northern Nimār was attached to the *Sūbah* of Mālwā, and the southern portion to that of Khāndesh. Prince Dānyāl was made governor of the Deccan with his capital at Burhānpur, where he drank himself to death in 1605. Akbar and his successors did much to improve the District, which became a place of the first importance, the city of Burhānpur attaining the height of its prosperity during the reign of Shāh Jahān. In 1670 the Marāthās first invaded Khāndesh, and plundered the country up to the gates of Burhānpur, the city itself being sacked by them some years afterwards, immediately on the departure of the unwieldy army which Aurangzeb led to the conquest of the Deccan. After the assumption of the government of the Deccan by the Nizām Asaf Jāh in 1720, Nimār was the scene of frequent conflicts between his troops and those of the Peshwā, until it was ceded to the latter by different treaties between 1740 and 1760. It was subsequently transferred, with the exception of the *parganas* of Kānāpur and Beriā in the south of the District, to Sindhia and Holkar. The curious and very inconvenient interlacing of the boundaries with those of Holkar's territory in this tract is a relic of the diplomacy of the Peshwā, who retained in his own possession certain villages which would give him control of the fords over the Narbadā. From 1800 until the close of the Marāthā and Pindāri Wars in 1818, Nimār was subjected to an unceasing round of invasion and plunder, still known as 'the time of trouble,' the traces of which are even now visible in the deserted state of fertile tracts once thickly populated. It was plundered impartially by the invading troops of Holkar and those which Sindhia

gathered to protect it, while the Pindāris may be said to have been at home in Nimār, their chief camps being located in the dense wilds of Handiā between the Narbadā and the Vindhyan range. In 1818 the Pindāris were dispersed by the British troops, their leader Chītū being killed by a tiger in his jungle refuge. The *parganas* of Kānāpur and Beriā had been ceded by the Peshwā in 1817, and the north of the District came under British management by the treaty with Sindhia of 1823. In 1860 these tracts, as well as the Zaināhād and Manjrod *parganas*, with Burhānpur, were ceded by Sindhia in full sovereignty. In 1864 Nimār was attached to the Central Provinces; and the District headquarters, which had previously been at Mandleshwar, were removed to Khandwā as offering a more central position for the new District. During the Mutiny, Asīrgarh and Burhānpur were garrisoned by a detachment of the Gwalior Contingent who were disaffected. The District officer, Major Keatinge, collected a local force and held a pass on the southern road, until a detachment of Bombay infantry came up and disarmed the Gwalior troops. In 1858 Tāntiā Topī traversed the District with a numerous body of starving followers. Considerable plundering occurred, and several police stations and public buildings, including those at Khandwā, were burnt; but the people remained unaffected.

KHANDWĀ was formerly a centre of the Jain community, and many finely-carved pieces of stone-work taken from Jain temples may be seen in the houses and buildings of the town. At BURHĀNPUR are two mosques erected in the sixteenth century, one of which is a fine building decorated with stone carvings. MĀNDHĀTA is well-known as containing one of the twelve most celebrated *lingams* of Siva, and a number of temples have been constructed there at different periods.

Population.

The population of the District at the last three enumerations has been as follows: (1881) 252,937; (1891) 285,944; and (1901) 327,035[1]. Substantial increases of 13 and 14 per cent., respectively, have occurred in the last two decades, the fortunes of Nimār between 1891 and 1901 having differed materially from those of the rest of the Province. There has been considerable immigration during the last few years from Central India, Berār, and Bombay. The District contains two towns, KHANDWĀ, the headquarters, and BURHĀNPUR; and 922 inhabited villages. The density of population is only 77 persons per square mile, or 65 if the towns are excluded. Large areas of the District are uncultivable, while others, once populated, have never recovered from the havoc wrought at the

[1] In 1904, 38 villages with an area of 51 square miles and a population of 2,580 persons, together with 293 square miles of Government forest, were transferred from Hoshangābād District to the Harsūd *tahsīl*. The corrected totals of area and population are 4,273 square miles and 329,615 persons.

commencement of last century. The principal statistics of population, according to the Census of 1901, are given below:—

Tahsīl.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Khandwā .	2,046	1	437	181,684	89	+ 11·5	11,954
Burhānpur .	1,138	1	194	92,933	82	+ 14·2	6,100
Harsūd . .	1,089	...	291	54,998	51	+ 24·6	1,352
District total	4,273	2	922	329,615	77	+ 14·2	19,406

The figures for religion show that 86 per cent. of the population are Hindus, 10 per cent. Muhammadans, and nearly 3 per cent. Animists. The proportion of Muhammadans is larger in Nimār than in any other District in the Province. Many of the aboriginal Bhīls nominally profess this religion, while there is a large settlement of poor Muhammadans in Burhānpur. The languages of Nimār are very diverse. A special local speech, Nimārī, akin to the Mālwī dialect of Rājputāna, but influenced by Marāthī, is spoken by the majority of the rural inhabitants of the north of the District. The Bhīls have a dialect of mixed Hindi and Gujarātī. About 14 per cent. of the population, principally in the Burhānpur *tahsīl*, speak the Khāndesh dialect of Marāthī, and 14,000 Muhammadans, or 4 per cent. of the population, speak Urdū, while more than half of the Korkūs have retained their own language.

The population, as is shown by the varieties of speech, has been recruited from different sources. There is a strong Marāthā element in the Burhānpur *tahsīl*, which was formerly part of Khāndesh. The hills are inhabited by the Bhīls of Central India and the Korkūs of the Sātpurās, while Rājputs, Muhammadans, and Gūjars from Northern India have colonized the Khandwā plain. The principal landholding castes are Rājputs (28,000), Brāhmans (15,000), Baniās (10,000), Kunbīs (27,000), and Gūjars (20,000). The Rājputs of Nimār are for the most part of very impure blood, and are locally designated as *chotī-tur*, which has this signification. The Brāhmans belong to two local subdivisions, called Nāgar and Nāramdeo. The latter derive their name from living on the Narbadā river, while the former are village priests, accountants, landlords, and schoolmasters. The best cultivating castes are the Gūjars and Kunbīs. The former especially constitute an industrious class of peasant proprietors, skilled in the irrigation of their fields from shallow wells, by which method they obtain two crops in the year. The Bhilālas (10,000), who are considered to be descended from the Aryan Rājput and the aboriginal Bhīl, have already been mentioned. They include a number of old proprietary families, but, except for these,

are scarcely to be distinguished in appearance from a purely Dravidian tribe, while they bear a very bad character for dishonesty and drunkenness. The same may be said about the Bhīls (22,000), who nominally profess Islām. In practice they, and more especially their women, retain the primitive beliefs of their forefathers. The Korkūs (31,000) of Nimār are somewhat more civilized and industrious than their fellow tribesmen of the central Sātpurās. They occupy chiefly the fertile lands in the otherwise depopulated Tāpti valley, are fairly supplied with ploughing and breeding cattle, and raise wheat, gram, and rice by regular tillage. Their villages are built of close bamboo wattle-work, with almost Swiss-like neatness. They habitually carry a small bamboo flute like a pen behind the ear, on which they play when drunk, or when propitiating the village deities. About 67 per cent. of the population of the District are supported by agriculture.

Christians number 1,399, including 1,187 natives. These latter are mainly converts of the Methodist Episcopal and Roman Catholic missions, which have stations at Khandwā. The former supports an orphanage, some schools, and a village in which the children are trained to agriculture. The latter has a Convent school at Khandwā, and several others in the interior, and also owns a village.

Agriculture.

The soil of the District is formed from disintegrated trap rock and is partly alluvial. Along the flat banks of streams it is a rich black mould, from 4 to 10 feet deep, and extremely tenacious of moisture. In ordinary years it produces two crops. Next to this in excellence is the ordinary black soil of the Narbadā valley, which will produce wheat or other spring crops without irrigation. It is not found over large tracts in Nimār, owing to the uneven nature of the country; but most villages have a small patch of it, and even the desolate upper Tāpti valley contains a considerable area of this class of soil. On the summits of the plateaux and level high-lying ground is found a shallow brown soil resting on gravel, and suited for the rains crops, which do not require large quantities of water. This covers more than half the cultivated area, and bears the staple crops of the District, *jowār* and cotton. There is comparatively little inferior soil.

No less than 330 square miles are held wholly or partially free of revenue, the amount thus assigned being Rs. 60,000. A special grant of a few villages for a term of years has been made to persons who assisted in the capture of the notorious dacoit Tāntiā Bhīl. More than 550 square miles are held on *ryotwāri* tenure, paying a revenue of Rs. 1,02,000; part of this area is still shown as Government forest and managed by the Forest department. The remaining area is held on the ordinary tenures, 31 per cent. being in the possession of *mālik-makbūzas* or plot-proprietors, and 52 per cent. in that of occupancy

tenants. The chief statistics of cultivation in 1903–4 are shown below, areas being in square miles :—

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.	Forests.
Khandwā . .	2,046	713	18	313	671
Burhānpur .	1,138	241	1	162	737
Harsūd . .	1,089	276	1	342	543
Total	4,273	1,230	20	817	1,951

The staple crops are cotton and *jowār*, covering respectively 410 and 264 square miles. Of other crops, wheat occupies 60 square miles, gram 36, rice 12, *til* 153, and pulses 105. Of special crops, there are a few hundred acres under *gānja* (*Cannabis sativa*), which is grown by licence under the direct supervision of Government, and provides the Province with its supply of this drug; a number of betel-vine gardens are cultivated, and several acres of vineyards formerly existed on the Asīrgarh hills, but viticulture is now on the decline. The vines produce a fair-sized white grape of a somewhat acid flavour. Pomegranates are also grown in Nimār.

During the last thirty-five years the occupied area has expanded by 50 per cent. There is still room for extension of cultivation, but mainly on poorer soils. The chief feature of recent years has been the increase of cotton; in the neighbourhood of Burhānpur this crop is so profitable that the cultivators do not grow enough *jowār* for their own food, and it has to be imported from Berār. The variety of cotton called Dhārwārī was obtained from Berār in 1892, and has since largely ousted the local variety previously grown. Loans under the Land Improvement Loans Act amounted to only Rs. 13,000 from 1893 to 1903, but in the following year Rs. 23,000 was advanced. Under the Agriculturists' Loans Act more than Rs. 80,000 was advanced during the decade ending 1904.

Cattle are largely bred in the District, mainly in the hills of the north and south. The Khandwā bullock is small, with short ears and dewlaps, and generally red or brown in colour, forming a striking contrast to the large white oxen of Mālwā and Gujarāt. For their size the local breed are powerfully built, and are light, active, and enduring, while they have the strong hoofs which are essential in a stony country. They trot well, and the marriage processions of the Gūjars, who prize good cattle, generally terminate in a race on the homeward journey. Buffaloes are bred locally; and well-to-do tenants frequently keep buffalo cows for the sake of their milk, from which *ghī* is manufactured, and also for the manure which they afford. The young bulls are sold in Khāndesh, or allowed to die, as they are not used for cultivation

Goats are largely kept by Muhammadans for their milk and for food, and sheep also in the Burhānpur *tahsīl*. Their manure is sold, but blankets are not made in any numbers.

About 20 square miles are irrigated, of which 3,000 acres are garden crops or orchards, and the remainder the spring crops, wheat, gram, and lentils (*masūr*). The application of an artificial water-supply to spring crops is a special feature of the agriculture of Nimār, found nowhere else in the Province. One reason which has been suggested for this is that the surface soil overlies rock or gravel at a slight depth, and is well drained. Nearly the whole of the irrigation is from wells, less than 200 acres being supplied from tanks or streams. There are about 2,500 temporary and nearly 2,000 masonry wells. Unfaced wells cost only about Rs. 60, and last for a number of years before the crumbling of the rock makes it necessary to face them at an expenditure of about Rs. 300. But occasionally the rock is too hard for blasting by indigenous methods.

Forests, &c.

Government forests cover 1,951 square miles, or 46 per cent. of the area of the District. About 1,706 square miles are 'reserved' forest; and the remainder, mainly situated in the Tāpti valley, has been assigned for disforestation when required for the extension of cultivation. The best forests are comprised in the Punāsa and Chāndgarh ranges on the banks of the Narbadā, and in the upper Tāpti valley, which contain the most valuable teak timber in the District. The Sātpurā Hills, north and south of the Tāpti, include the greater part of the remaining forest area, mainly composed of inferior species. The growth on the hill slopes is dense; but elsewhere it is generally sparse, and interspersed with numerous bare patches, the result of former 'shifting' cultivation. The forest revenue in 1903-4 was Rs. 1,50,000, almost the highest in the Province. This favourable result is not due to the excellence of the forests, but to the local demand for fuel and grazing. Fuel is exported to the cotton factories of Berār and Khāndesh, and also used in the District factories. Timber likewise is largely exported, while in 1903-4 nearly 210,000 head of cattle were taken to graze in 'reserved' forest, and the revenue realized from this source was Rs. 46,000.

Iron ores exist at Chāndgarh, Barwai, and on the Chhotā Tawā river, but they are not now worked. There are quarries of limestone near Burhānpur, and of sandstone in various places.

Trade and communications.

The hand industries of the District are unimportant, the majority of the non-agricultural population being engaged in transport, commerce, or the working-up of raw cotton. Coarse cotton cloth is woven at Khandwā and other large villages. There are silk-weaving and gold and silver lace industries at Burhānpur, and rough glass globes lined with lead for

decorating the interiors of houses are also made. In 1904 the District contained 26 cotton-ginning factories and 9 pressing factories. Most of these are at Khandwā; and there are two ginning factories and two presses at Lālbāgh, the station for Burhānpur, and ginning factories at Nimārkhedī, Jawar, and Pandhāna in the Khandwā *tahsīl*, and at Ichhāpur, Burhānpur, Shāhpur, Bahādurpur, and Aimāgird in the Burhānpur *tahsīl*. The proprietors are generally Mārwāri Baniās, Muhammadan Bohrās, or Pārsīs, but a few are Marāthā Brāhmans. The large majority of the factories have been opened since 1890, and many new ones have been started within the last few years. The amount of capital invested in them is approximately 13 lakhs, and their output for 1904 was 180,965 cwt. of cotton ginned, and 202,989 cwt. pressed. A combined oil mill, timber factory, and iron foundry has been established at Khandwā, with a capital of Rs. 22,000.

Raw cotton and cotton-seed, *til*, and *jowār* are the principal exports. Most of the *jowār* sent from Khandwā comes from Indore and the adjoining States. Other exports include *san*-hemp, timber and bamboos, flowers and seed of the *mahuā*-tree, and ground-nuts. Salt comes from Bombay, and a coarser kind from Ahmadābād, *gur* or unrefined sugar from Poona and Northern India, and tobacco from Gujarāt. Building and paving stones are obtained from Hoshangābād. The cotton trade is in the hands of Muhammadan Bhātias, and that in oilseeds is conducted by a European firm.

The Great Indian Peninsula Railway line to Jubbulpore passes through the centre of the District, with a length of 89 miles and 16 stations within its limits. From Khandwā, the Rājputāna-Mālwā metre-gauge line branches off to Indore, with a length of 29 miles and 5 stations in Nimār. There are no metalled roads, except short feeders. The only made road is that from Khandwā towards Mhow, and this has now been superseded by the railway. The rocky nature of the soil permits of the maintenance of a network of passable tracks in the open country; but the communications with the upper Tāpti valley and across the passes to Berār are somewhat deficient, and are now being improved by the construction of main roads. The total length of metalled roads is 62 miles, and of unmetalled roads 117 miles. With the exception of 24 miles maintained by the District council, all are in charge of the Public Works department; and the annual expenditure on maintenance is Rs. 56,000. There are avenues of trees on only one or two short lengths of road.

Famine.

The first recorded famine in Nimār was in the year 1803, and was due to a failure of rain combined with the devastation caused by Sindhia's armies. It is known as the *Mahā-kāl*, or 'great famine,' and grain sold at 1 lb. per rupee. The fertile and populous tracts of Zainābād and Manjrod became

wholly waste. The next famine occurred in 1845, caused by a failure of the monsoon, which ceased in August. There was much distress; Rs. 70,000 was expended on relief and 3 lakhs of revenue was remitted. The District was only slightly affected in 1897, distress being confined to some villages on the Hoshangābād border and to the forest tribes, and the numbers relieved never reached 4,000. In the cotton areas an excellent crop in 1895 had enriched the people. In 1899 the rainfall was extraordinarily deficient, and there was a complete failure of both harvests. The numbers on relief in July, 1900, reached 89,000, or 31 per cent. of the population, and the total expenditure was 18 lakhs. Several roads were constructed or improved, the railway embankment was widened, and forest-clearings were made in the Manjrod tract with a view to the settlement of *ryotwāri* villages.

Administration.

The Deputy-Commissioner is aided by three Assistant or Extra-Assistant Commissioners. For administrative purposes the District is divided into three *tahsīls*, each of which has a *tahsīldār* and a *naib-tahsīldār*, while an additional *naib-tahsīldār* is posted to Burhānpur for the Manjrod tract. A Forest officer of the Imperial Service is usually stationed in the District, and the public works are in charge of the Executive Engineer of the Hoshangābād division, whose head-quarters are at Hoshangābād town.

The civil judicial staff consists of a District and a Subordinate Judge, with Munsifs at Khandwā and Burhānpur, and additional Munsifs have recently been appointed to Khandwā. The Divisional and Sessions Judge of the Nerbudda Division has superior civil and criminal jurisdiction. The tendency of the people to petty litigation is noticeable, but many suits are compromised after being filed in court. Owing to the situation of the District on the main route between Northern and Central India and the Deccan, many professional criminals annually pass through it and commit dacoities, burglaries, and cattle-lifting; but very little serious crime is to be attributed to the resident population. The proximity of several Native States gives rise to a large amount of smuggling of excisable articles.

Nimār is the only District in the Central Provinces in which the regular land revenue system of the Mughal empire was introduced. The assessment was made on separate holdings after measurement. The *pātel* or headman of the village received a drawback on the collections, besides various miscellaneous dues, and his office was hereditary; while for groups of villages superintendents designated *mandloī* were appointed, who managed the revenue accounts and received a proportion as remuneration, their offices being also hereditary. Relations of the *pātel* or *mandloī*, in lieu of succession to the office which passed by primogeniture, obtained holdings of land, and thus a class of hereditary

cultivators grew up. In the less advanced tracts, the old Rājput or Bhilāla chieftains occupied the position of the *mandloī*. Under the Muhammadans Nimār attained a high degree of prosperity; and although the period of Marāthā administration was characterized by reckless extortion and oppression, the framework of the revenue system was not seriously impaired. Owing to changes in the District area, the revenue demand of the earlier settlements cannot be compared with that now existing. The first settlements were effected by officers who were ignorant of local conditions, and made no allowance for the removal of the market for produce furnished by the troops which had previously garrisoned the District. In 1851, after several short-term assessments, an attempt was made to settle the revenue with the body of village cultivators and to confer on them proprietary rights, the hereditary *pātel* and headman of the village being reduced to the position of a mere rent collector. This system generally failed, as most of the village communities, having no experience of the system or clear understanding of the proposals made, refused to accept them, and the villages were settled either with the hereditary headmen, with the old superior revenue officials, or with strangers. In certain areas the settlement was not carried out at all owing to the Mutiny. After Nimār was transferred to the Central Provinces, it was determined, in view of the unsatisfactory nature of the previous settlement, to make a fresh investigation of tenures for the whole District. A new twenty years' settlement was accordingly completed in 1868-9 by Captain Forsyth, whose report on Nimār may be specially mentioned for its excellence. The net revenue was fixed at 1·81 lakhs. The term of the old assessment was, however, allowed to expire, and the new settlement did not come into force until 1875. Proprietary rights were conferred on the headmen; but in view of the fact that in many cases the previous settlement had been made direct with the body of cultivators, many of these received the *mālik-makbūza* tenure, or right of ownership in their individual holdings, while an occupancy right was conferred on all other tenants. On the expiry of Captain Forsyth's settlement, the District was reassessed during the years 1895-8. The net revenue was raised to 2·89 lakhs, or by 52 per cent., the average revenue incidence per acre being R. 0-9 (maximum Rs. 1-1-8, minimum R. 0-4-9), and that of the rental R. 0-11-8 (maximum Rs. 1-9-4, minimum R. 0-6). The term of the new settlement is fourteen or fifteen years over most of the District.

The receipts of land and total revenue for a series of years are shown in the table on the next page, in thousands of rupees. The increase in the land revenue receipts is largely due to the colonization of land by Government.

The management of local affairs outside municipal areas is entrusted

to a District council and three local boards, each having jurisdiction over one *tahsīl*. The income of the District council in 1903–4 was Rs. 59,000. The expenditure on education was Rs. 24,000 and on public works Rs. 17,000. KHANDWĀ and BURHĀNPUR are municipal towns.

	1880–1.	1890–1.	1900–1.	1903–4.
Land revenue . .	1,82	1,83	4,45	4,00
Total revenue . .	4,93	1,87	8,44	9,59

The District Superintendent of police has a force of 447 officers and men, including a special reserve of 25, and 7 mounted constables, besides 1,383 village watchmen for 924 inhabited towns and villages. Khandwā contains a District jail, with accommodation for 122 prisoners, including 12 females. The daily average number of prisoners in 1904 was 91.

In respect of education Nimār is the leading District of the Province, nearly 6 per cent. of the population (11·2 males and 0·3 females) being able to read and write. The proportion of children under instruction to those of school-going age is 12 per cent. Statistics of the number of pupils are as follows: (1880–1) 3,971; (1890–1) 4,534; (1900–1) 4,828; and (1903–4) 5,599, including 227 girls. The educational institutions comprise a high school at Khandwā, 3 English and 4 vernacular middle schools, and 95 primary schools. There are also 2 primary girls' schools. The expenditure on education in 1903–4 was Rs. 42,000, of which Rs. 32,000 was derived from Provincial and Local funds and Rs. 6,000 from fees.

The District has 7 dispensaries, with accommodation for 98 in-patients. In 1904 the number of cases treated was 50,262, of whom 461 were in-patients, and 1,791 operations were performed. The expenditure was Rs. 20,000.

Vaccination is compulsory only in the municipal towns of Khandwā and Burhānpur. The number of persons successfully vaccinated in 1903–4 was 44 per 1,000 of the District population, a very favourable result.

[J. Forsyth, *Settlement Report* (1866); C. W. Montgomerie, *Settlement Report* (1901). A District Gazetteer is being compiled.]

Nimār Zila.—District in the extreme south of Indore State, Central India, lying between 21° 22′ and 22° 32′ N. and 74° 20′ and 76° 17′ E., partly north and partly south of the Narbadā river, with an area of 3,871 square miles. The population decreased from 299,160 in 1891 to 257,110 in 1901, giving in the latter year a density of 66 persons per square mile. The district contains three towns, KHARGON (population, 7,624), the head-quarters, MAHESHWAR (7,042), and BARWĀHA

(6,094); and 1,065 villages. The land lying immediately in the valley of the Narbadā is of high fertility, but the rest of the district is broken up by a succession of forest-covered ridges, which strike out from the Sātpurās. In the sixteenth century these forests were noted for their herds of elephants.

The tract in which this district lies has always been important historically. From the earliest days the great routes from the south to the north have traversed it. In the early Buddhist books two routes from the Deccan to Ujjain are mentioned, one passing along the western side of the district and crossing the Narbadā opposite Mahisatī, the modern Maheshwar, and the other on the west, which crossed at Chikalda and passed up northwards through Bāgh in Gwalior State. During the Mughal supremacy also the main route from the Deccan to Agra and Delhi passed along much the same line as the eastern Buddhist route, crossing the river at the ford of Akbarpur, now Khalghāt. The line of this road is still marked by the terminations *-sarai* ('resthouse') and *-chaukī* ('guardhouse') attached to village names. In the fastnesses of Nimār the aboriginal tribes who were retreating before the Aryan invaders found a last refuge, their representatives, the Bhīls, Gonds, Kols, and Korkūs, being to this day the principal inhabitants of the tract. It includes most of the ancient Prānt Nimār, the country lying along the Narbadā valley between 70° and 77° E. In the third century A.D. the northern part was possessed by the Haihayas, who made Māhishmatī (now Maheshwar) their capital. In the ninth century the Paramāras of Mālwā held the country, and have left numerous traces of their rule in the Jain and other temples, now mostly ruined, which lie scattered throughout the tract, as at Un, Harsūd, Singhāna, and Deola. The Muhammadans under Alā-ud-dīn first appeared in the thirteenth century, and from that time it became more or less subject to the rule of Delhi. From 1401 it was held by the independent Muhammadan kings of Māndu (*see* MĀLWĀ), till it fell to Bahādur Shāh of Gujarāt in 1531 and to Humāyūn in 1534.

It passed to Akbar with Mālwā in 1562, and was included in the *Sūbah* of Mālwā, to which tract, however, it does not belong topographically, its territories being divided between the three *sarkārs* of Bijāgarh, Hindia, and Māndu. The greater part of the district lay in the Bijāgarh *sarkār*, while the head-quarters were at the town of Jalālābād, situated at the foot of the Bijāgarh fort, of which the ruins are still standing. The fort was built, it is said, by a Gauli chief, Bijā, of the same tribe as Asā of Asīrgarh, in the thirteenth century. Under Aurangzeb, most of Nimār was included in the *Sūbah* of Aurangābād. The high state of prosperity reached in those days is proved by the ruins of numerous mosques, palaces, and tombs, now buried in jungle. Towards the end of the seventeenth century the Marāthās entered the

district, ravaging as far as Dharampurī in 1690, but the suzerainty of the Peshwā was not firmly established over the tract till between 1740 and 1755. Under Marāthā rule the district rapidly lost its prosperity, suffering severely from the ravages of the Bhīls, whom the harsh measures of the Marāthā officials entirely failed to reduce to order. Between 1764 and 1788 the country fell to Holkar, Sindhia, and the Ponwār of Dhār, while from 1800 to 1818 it was overrun by the destructive armies of the great Marāthā chiefs and the Pindāri bands.

By the agreement signed at Gwalior, in 1823, most of Nimār, which then belonged to Sindhia, was placed under British management to improve its condition. As late as 1855 the country was more than half depopulated, and it was only subsequent to the disturbances of 1857 that it recovered part of its old prosperity. The superior control rested with the Resident at Indore (after 1854 the Agent to the Governor-General in Central India), the immediate charge being entrusted to an officer whose head-quarters were at Mandleshwar. In 1861 the district was ceded in full sovereignty to the British Government, and in 1864 was incorporated in the Central Provinces, but in 1867 was restored to Holkar in exchange for certain lands held by him in the Deccan and elsewhere.

The district is in charge of a *Sūbah*; and for administrative purposes is divided into eleven *parganas*, with head-quarters at Barwāha, Bhikangaon, Chikalda, Kasrāwad, Khargon, Lawānī, Maheshwar, Mandleshwar, Sanāwad, Sendhwa, and Silu, each in charge of an *amīn*. The total revenue is 9·4 lakhs.

Nimāwar.—*Zila* in Indore State, Central India. *See* NEMĀWAR.

Nīmbahera District.—A *pargana* of the State of Tonk, Rājputāna, lying between 24° 24′ and 24° 49′ N. and 74° 13′ and 74° 54′ E., with an area of 383 square miles. It is irregular in shape, and consists of thirteen separate groups of villages, between which are to be found tracts belonging to Udaipur and Gwalior. Roughly speaking, the district is bounded by Gwalior on the east and by Udaipur elsewhere. The south-western part is high table-land; a broken range of hills runs north and south through the centre, and the Chitor hills extend to the north-eastern corner. The population in 1901 was 40,499, compared with 65,013 in 1891. There are 197 villages and one town, Nīmbahera (population, 5,446). The principal castes are Mahājans, Brāhmans, Chamārs, and Jāts, forming respectively about 9, 7, 6, and 5 per cent. of the total. The district takes its name from its head-quarters, which is said to have been founded by, and named after, a Paramāra Rājput, Nīmjī, about 1058. Up to the time of Rānā Ari Singh it formed part of Mewār. Ahalyā Bai got possession about 1775, and on her death it passed to Tūkajī Holkar, who was succeeded by his son, Kāshī Rao. Jaswant Rao Holkar shortly afterwards seized it; and in 1809 he

granted it to his comrade in arms, Amīr Khān, to whom its possession was guaranteed by the British Government in the treaty of 1817. During the Mutiny some slight opposition to British authority was offered by the local governor, and the Political Agent of Mewār on his own authority allowed the troops of Udaipur to occupy the district; but after the restoration of peace the Mahārānā was compelled by the British Government to return it to the Nawāb of Tonk, and to account for the revenues during the time of his occupation. Of the total area, about 244 square miles, or 64 per cent., are *khālsa*, paying revenue direct to the State; and the *khālsa* area available for cultivation is about 200 square miles. Of the latter, nearly 76 square miles, or 38 per cent., were cultivated in 1903–4, the irrigated area being about 11 square miles. Of the cropped area, *jowār* occupied nearly 29 per cent., maize 14, wheat 13, linseed 11, *til* 8, cotton 7, and poppy about 6 per cent. There is a great variety in the classes of soil, but the most prevalent is known as *dhāmni*, being somewhat lighter in colour and less fertile than the true black soil. The revenue from all sources is about 2·4 lakhs, of which three-fourths is derived from the land. The Rājputāna-Mālwā Railway (Ajmer-Khandwā section) traverses the eastern part of the district, and there is a station at Nīmbahera town.

Nīmbahera Town.—Head-quarters of the *pargana* of the same name in the State of Tonk, Rājputāna, situated in 24° 37′ N. and 74° 42′ E., on the Ajmer-Khandwā section of the Rājputāna-Mālwā Railway, 16 miles north-west of Nīmach, 134 miles south of Ajmer, and about the same distance south-west of Tonk city. Population (1901), 5,446. The town is surrounded by a rampart with towers, and has a local reputation for the vessels of daily use, such as tumblers, plates, and rose-water sprinklers, made of a mixture of several metals. It possesses a cotton-ginning factory and press, both private concerns, a post and telegraph office, a small jail, an Anglo-vernacular school, and a dispensary for out-patients.

Nīm-kā-thāna.—Head-quarters of the Torāwati *nizāmat* and of the Sawai Rāmgarh *tahsīl* in the State of Jaipur, Rājputāna, situated in 27° 44′ N. and 75° 47′ E., about 56 miles north of Jaipur city. Population (1901), 6,741. A considerable body of the State troops is quartered here. The town contains a vernacular school attended by 36 boys, and a hospital with accommodation for 4 in-patients.

Nīmkhera.—*Bhūmiāt* in the BHOPĀWAR AGENCY, Central India.

Nīmrāna.—Town in the estate of the same name in the State of Alwar, Rājputāna, situated in 28° N. and 76° 23′ E., about 33 miles north-by-north-west of Alwar city. It possesses a vernacular school and a hospital with accommodation for 4 in-patients. The population in 1901 was 2,232. The estate, which consists of four detached blocks containing 19 villages, has an area of nearly 29 square miles, and

is held by a Rājā of the Chauhān clan of Rājputs who claims descent from the great Prithwī Rāj, the last Hindu king of Delhi. The town of Nīmrāna is said to have been founded in 1467 by Dūp Rāj, from whom the present Rājā, Janak Singh, is the twenty-second in descent. The scattered nature of the estate is due to the fact that the entire territories, which at one time embraced three *parganas* containing at least 36 villages, were confiscated by Lord Lake in 1803, because the Rājā gave shelter and assistance to the Marāthās, and were made over to Alwar. Of these only the Nīmrāna *pargana*, with a few isolated villages, was restored in 1815. The Rājā for many years urged claims to independence of Alwar; but these could not be admitted, as it was clearly proved that the original estate had been granted by Alwar, subject to the payment of Rs. 8,648, being the tribute levied by the Marāthās. In 1868 it was finally decided that Nīmrāna was a fief of Alwar, and should pay to it an annual sum, fixed for terms of thirty years. This sum was to be one-eighth of the land revenue of the whole estate (*jāgīr*, temple lands, and all other alienations included); and for the thirty years ending 1898 it was fixed at Rs. 3,000, while for the next thirty years the tribute has been raised to Rs. 4,300 annually. In addition, *nazarāna* or succession fee, varying in amount, is payable. Thus if a son or grandson succeeds, the fee is half a year's revenue, and if a brother, nephew, cousin, or the like succeed, one year's revenue, tribute being deducted. Again, when a succession follows the last preceding succession within one year, no *nazarāna* is leviable, and when within two years, one-half of the usual amount is collected. The population of the estate in 1901 was 8,799, more than 40 per cent. being Ahīrs. A regular land settlement was made for twenty years in 1898, the total demand being Rs. 33,000 for the *khālsa* and Rs. 5,650 for the *muāfi* area. The normal income of the estate is about Rs. 38,000, and the expenditure Rs. 33,000, and a sum of about 1·4 lakhs is invested in Government securities.

[M. F. O'Dwyer, *Assessment Report of Nīmrāna* (Ajmer, 1898).]

Nipāl.—Native State. *See* NEPĀL.

Nipāni.—Town in the Chikodi *tāluka* of Belgaum District, Bombay, situated in 16° 24′ N. and 74° 23′ E., on the road from Belgaum to Kolhāpur, 40 miles north of Belgaum town. Population (1901), 11,632. The estate, of which this town was the principal place, lapsed to the British Government in 1839 upon the demise of its proprietor. Nipāni has a large trade, and a crowded weekly market on Thursdays. On market days from two to three thousand cattle are offered for sale. The municipality, established in 1854, had an average income during the decade ending 1901 of Rs. 13,000. In 1903–4 the income was Rs. 13,200. The town contains three schools for boys with 100 pupils, and one for girls with 22.

Niphād.—*Tāluka* of Nāsik District, Bombay, lying between 19° 55′

and 20° 14′ N. and 73° 54′ and 74° 20′ E., with an area of 415 square miles. It contains 119 villages, but no town. Niphād is the head-quarters. The population in 1901 was 92,791, compared with 92,368 in 1891. This is the most thickly populated part of the District, with a density of 223 persons per square mile. The demand for land revenue in 1903-4 was 2·4 lakhs, and for cesses Rs. 19,000. The *tāluka* is an undulating plain of deep black soil, yielding rich crops of wheat and gram. The climate is good, but the heat in April and May is excessive. The water-supply is sufficient, the chief river being the Godāvari. The annual rainfall averages 23 inches.

Nīra Canal.—A canal on the left bank of the Nīra river, Poona District, Bombay, with a total length of 100 miles, commanding 177 square miles in the Purandhar, Bhīmthadi, and Indāpur *tālukas*. The canal, which was constructed in 1885-6, is fed by LAKE WHITING. The total capital outlay on the canal was 21 lakhs, and on the canal and reservoir 57 lakhs. The largest area irrigated so far has been 81 square miles. Water rates are charged according to the nature of the crops. The gross assessment of, and expenditure on, the canal has been, in thousands of rupees:—

	Assessment.	Expenditure.
1885-1890, average	13	19
1890-1900, average	95	55
1903-4	2,34	64

The work yields a profit on capital of about 3 per cent.

Nirgunda.—Village in the Hosdurga *tāluk* of Chitaldroog District, Mysore, situated in 13° 47′ N. and 76° 11′ E., 7 miles west of Hosdurga town. Population (1901), 352. It was in ancient times the capital of a 'three hundred' province of the same name, held under the Gangas in the eighth century. It is said to have been founded long before by a king from the north, who named it Nīlāvati. During the Hoysala period it was ruled by Ganga princes. In the thirteenth century a merchant restored the temple and also repaired the tank, which had been breached for a very long period, and the king endowed an *agrahāra* for Brāhmans. In the sixteenth century the Vijayanagar king seems to have established a bank for the Brāhmans, and it was a place of trade for the Lingāyats. Later on, owing apparently to some epidemic, it was deserted in favour of Bāgūr.

Nirmal Tāluk.—*Tāluk* in Adilābād District, Hyderābād State, with an area of 548 square miles. The population in 1901, including *jāgirs*, was 45,551, compared with 54,455 in 1891, the decrease being due to the famine of 1900. The *tāluk* contains one town, NIRMAL (population 7,751), its head-quarters; and 115 villages, of which 15 are *jāgīr*. The land revenue in 1901 was 1·2 lakhs. Rice is extensively grown by tank-irrigation. The Godāvari forms the southern boundary of the *tāluk*.

which is hilly in the north. In 1905 the *tāluk* was altered by the transfer of some villages to Kinwat, and the addition of part of Narsāpur. The *paigāh tāluk* of Yelgadap, containing 48 villages, lies to the east, with a population of 13,375, and an area of about 119 square miles.

Nirmal Town.—Fortified town and head-quarters of the *tāluk* of the same name in Adilābād District, Hyderābād State, situated in 19° 6′ N. and 78° 21′ E. Population (1901), 7,751. In 1752 the Rājā of Nirmal attacked the Nizām Salābat Jang, who was marching from Aurangābād to Golconda in company with Bussy. In the battle the Rājā was slain and his forces were dispersed. The offices of the *tahsīldār*, police inspector, Assistant Conservator of Forests, and the Public Works supervisor are located here, besides a dispensary, a sub-post office, and a school. The town is prettily situated in country broken up by granite boulder hills, most of which in the neighbourhood of the town are crowned by forts. The largest of these stands in the centre of the town and includes the ruins of the old palace. The main fortifications were built by French officers in the Nizām's service, and are still in good preservation, and contain a number of guns. Three towers appear to have been made for boring ordnance.

Nirmal Village (or 'The Stainless').—Village in the Bassein *tāluka* of Thāna District, Bombay, situated in 19° 24′ N. and 72° 47′ E., 6 miles north of Bassein town. Population (1901), 243. It is one of the most sacred places in the District, having a much venerated *lingam*, and being, according to tradition, the burying-place of one of the great Sankarāchāryas, the apostles of the modern Brāhmanic system. Here, on the anniversary of his death Kārtik Vadya 11th (November), a large fair is held, which lasts for a week and is attended by about 7,000 pilgrims—Hindus, Musalmāns, Christians, and a few Pārsīs. The principal articles sold are brass and copper vessels, dry plantains, sweet-meats, cloth, and cattle. There are eight temples at Nirmal, all built about 1750 by Shankarjī Keshav, *Sar-sūbahdār* of Bassein. A yearly grant of Rs. 454 is sanctioned by Government towards the maintenance of a Brāhman almshouse (*anna-chhatra*), and Rs. 48 towards a Bairāgi almshouse. The Portuguese pulled down the old temples and destroyed the *lingam*. The stones which they built into Christian churches were probably taken from these old temples. On the capture of Bassein by the Marāthās (1739) Nirmal was purified, prints of the feet of Sri Dattātraya took the place of the *lingam*, and a reservoir was built. There is a church dedicated to Santa Cruz, which was rebuilt by the parishioners in 1856, at a cost of about Rs. 24,000. In front of a house in the village, about 500 yards north of the chief temple, is a long dressed stone with some letters which seem part of a Sanskrit inscription of the seventh century.

Nirmāli.—Petty State in MAHĪ KĀNTHA, Bombay.

Nirmand.—Village in the Kulū subdivision of Kāngra District, Punjab, situated in 31° 6′ N. and 77° 38′ E. Population (1901), 1,150. Near it stands an ancient temple dedicated to Parasu Rāma, in which is deposited a copperplate deed of grant in Sanskrit, probably of A.D. 612-3, recording the assignment of the village of Sulisagrāma by a king Samudrasena to the Brāhmans who studied the Atharva Veda at Nirmanda, a temple dedicated to the god Triparantaka or Siva under the name of Mihiresvara or the Sun-god.

[*Corpus Inscriptionum Indicarum*, vol. iii, p. 286.]

Nitī.—Pass in Garhwāl District, United Provinces, situated in 30° 58′ N. and 79° 53′ E. The pass is on the watershed between the Sutlej and Ganges basins, at a height of 16,628 feet above sea-level, and gives access to Tibet. A village named Nitī is situated on the bank of the Dhaulī river, 13 miles south of the pass, at an elevation of 11,464 feet above the sea. It contains a population (1900) of 26? during the summer months, but is deserted in winter.

Nizāmābād District.—District in the Medak Gulshanābād Division of the Hyderābād State, formerly known as INDŪR DISTRICT. It is bounded on the north by Nānder and Adilābād; on the east by Karīmnagar; on the south by Medak; and on the west by Nānder. Its present area, including *jāgīrs*, is about 3,282 square miles. A few minor ranges of hills are found in the east and west. The largest river in the District is the Godāvari, which forms its northern boundary, separating it from Nānder and Adilābād. The Mānjra, the chief tributary of the Godāvari, flows along the western border, separating it from Nānder on the west. Smaller streams are the Phulāng traversing the Nizāmābād and Armūr *tāluks*, and the Yedlakatta Vāgu, a perennial stream in the Kāmāreddipet *tāluk*.

The most important trees are teak, black-wood, ebony, *nallāmaddi* (*Terminalia tomentosa*), *eppa* (*Hardwickia binata*), *bījāsāl* (*Pterocarpus Marsupium*), *tarvar* (*Cassia auriculata*), custard-apple, mango, and tamarind.

The rocks are related to the Archaean and Deccan trap formations, the former occupying a very large area.

Tigers, leopards, wolves, bears, and wild hog are common, while *sāmbar*, spotted deer, and *nīlgai* are also found.

The climate is dry and healthy from February to the end of May, but damp and malarious during the rains and the cold season, giving rise to ague and various forms of fever. The temperature ranges between 45° in December and 110° in May. The annual rainfall averages about 42 inches.

Details of the population and area before the changes made in 1905, when the District was constituted, have been given under INDŪR DI-

TRICT, the name by which it was formerly known. It now has a population (1901) of 467,367, and in its present form comprises the five *tāluks* of NIZĀMĀBĀD, BODHAN, ARMŪR, KĀMĀREDDIPET, and YELLĀREDDIPET, besides a *paigāh* estate, three *samasthāns*, and seven large *jāgīrs*. The chief towns are NIZĀMĀBĀD (population, 12,871), the head-quarters of the District, ARMŪR (9,031), BODHAN (6,438), and BALKONDA (5,118). Of the total population, more than 91 per cent. are Hindus, the rest being Musalmāns. More than 78 per cent. of the people speak Telugu. The land revenue demand is about 14·7 lakhs.

Nizāmābād Tāluk.—*Tāluk* in Nizāmābād District, Hyderābād State, formerly known as the Indūr *tāluk*, with an area of 550 square miles. The population in 1901, including *jāgīrs*, was 75,483, compared with 74,466 in 1891. The *tāluk* contains 107 villages, of which 38 are *jāgīr*. NIZĀMĀBĀD or Indūr (population, 12,871), the only town, is the head-quarters of the District and *tāluk*. The land revenue in 1901 was 2·5 lakhs. The soils are mostly sandy, and rice is extensively raised by tank irrigation. The Godāvari flows in the north of the *tāluk*.

Nizāmābād Town (or Indūr).—Head-quarters of the District and *tāluk* of the same name in Hyderābād State, situated in 18° 40′ N. and 78° 6′ E., on the Hyderābād-Godāvari Valley Railway. Population (1901), 12,871. It contains the offices of the First and Third Tālukdārs, the District and Irrigation Engineers, and the Police Superintendent, the District court, one school with 324 pupils, a Central jail, a dispensary, and a District post office. The water-supply system, originally a gift from the Rānī of Sirnāpalli, is now maintained by the local board. Nizāmābād also has a rice-husking factory, cotton-ginning and pressing factories, and an American mission, all situated in the north-eastern quarter, known as Kanteshwar. The fort on a hill to the south-west of the town was originally a temple built by Raghunāth Das, who made the tank which now forms the source of water-supply.

Nizāmat-i-Janūb.—Southern district of the Bhopāl State, Central India, lying between 22° 34′ and 23° 17′ N. and 77° 10′ and 78° 41′ E., with an area of 2,191 square miles. The district shares in the general conditions common to MĀLWĀ. It is watered by the Narbadā, Betwā, and numerous tributaries of these streams. The whole of this district belonged originally to the Gond chiefs of Garhā-Mandlā, their principal stronghold being Ginnurgarh, which stands on an isolated hill, 38 miles south of Bhopāl city, in 22° 49′ N. and 77° 36′ E. This fort passed into the hands of Dost Muhammad in the eighteenth century. In reward for services rendered to the Gond chief Newal Shāh, Dost Muhammad received a residence in the fort. At Newal Shāh's death he constituted himself manager on behalf of the chief's widows, and soon after filled the fort with his own adherents, though the widows

were always treated with consideration. The fort was later on used by Wazīr Muhammad as a place of retreat when he was driven out of Bhopāl by his enemies. The remains of a large palace belonging to its original Gond owners, a mosque, and some other buildings are still standing. Two interesting Gond forts exist at Bārī and Chaukīgarh.

The population in 1901 was 198,104, of whom Hindus numbered 135,599, or 68 per cent.; Animists, 51,043, or 26 per cent.; and Musalmāns, 10,438, or 5 per cent. The district contains 798 villages, and is divided for administrative purposes into eight *tahsīls*, with head-quarters at Udaipura, Barelī, Bārī, Behronda, Chāndpura, Shāhganj, Kaliākherī, and Mardānpur, each under a *tahsīldār*, the whole district being in charge of a *Nāzim*, whose head-quarters are at KALIĀKHERĪ. The total revenue is 8·1 lakhs.

Nizāmat-i-Maghrib.—Western district of the Bhopāl State, Central India, lying between 22° 34′ and 23° 17′ N. and 76° 28′ and 77° 31′ E., with an area of 1,603 square miles. It is bounded on the north by Gwalior State; on the south by Indore State and the Narbadā river; on the east by portions of Bhopāl State; and on the west by Gwalior. The Narbadā and Pārbati rivers both flow through the district. It fell to Dost Muhammad Khān in 1716; about 1745 it was seized by the Peshwā, but was restored to the Bhopāl State by the British Government in 1818.

The population in 1901 was 132,042, of whom Hindus numbered 113,042, or 86 per cent.; Musalmāns, 11,882, or 9 per cent.; and Animists, 5,226, or 4 per cent. The district contains three towns, SEHORE (population, 16,864), ASHTA (5,534), the head-quarters, and ICHHĀWAR (4,352); and 622 villages. It is in charge of a *Nāzim*, and is divided for administrative purposes into seven *tahsīls*, with head-quarters at Ashta, Ichhāwar, Bilkīsganj, Jāwar, Chhipāner, Sehore, and Siddīkganj, each under a *tahsīldār*. The revenue amounts to 4·7 lakhs. The district is traversed by three metalled roads—Ashta to Sehore, 28 miles; Dodai to Sehore, 42 miles; and Sehore town to the station on the Midland section of the Great Indian Peninsula Railway.

Nizāmat-i-Mashrik.—Eastern district of the Bhopāl State, Central India, lying between 23° 1′ and 24° 42′ N. and 77° 41′ and 78° 51′ E., with an area of 1,691 square miles. It is bounded on the north by the Saugor District of the Central Provinces and the States of Gwalior and Nawāb-Bāsoda; on the south by portions of Bhopāl and the Narbadā river, which separates it from the Central Provinces; on the east by the Saugor and Narsinghpur Districts of the Central Provinces; and on the west by Gwalior and portions of Bhopāl. The district is somewhat cut up in its eastern section by outliers of the Vindhyas. It is watered by the Narbadā and numerous minor streams. The forests are of considerable commercial value.

The population in 1901 was 131,370, of whom Hindus numbered 94,953, or 72 per cent.; Animists, 25,923, or 19 per cent.; and Musalmāns, 8,800, or 7 per cent. The number of villages is 811, and the revenue is 3·7 lakhs. The district is in charge of a *Nāzim*, whose head-quarters are at RAISEN. It is divided for administrative purposes into ten *tahsīls*, each under a *tahsīldār*, with head-quarters at Raisen, Bamorī, Jaithārī, Dehgaon, Deori, Silvānī, Siwāns, Gairatganj, Garhī, and Piklon. The only metalled road is that from Raisen to Salāmatpur station on the Midland section of the Great Indian Peninsula Railway.

Nizāmat-i-Shimāl.—Northern district of the Bhopāl State, Central India, lying between 23° 4′ and 23° 52′ N. and 77° 1′ and 77° 49′ E., with an area of 1,417 square miles. The whole district lies in MĀLWĀ, and is watered by the Pārbati, which flows along its western border, and by numerous affluents of that stream and of the Betwā.

Special interest attaches to part of this district as the nucleus from which the Bhopāl State was developed. About 1709 Dost Muhammad Khān obtained the Berasiā *pargana* from the emperor Bahādur Shāh, and on this foundation he and his successors built up the State. In Akbar's time it had formed part of the Raisen *sarkār* of the *Sūbah* of Mālwā. In the end of the eighteenth century the Berasiā *pargana* was seized by the Marāthā chief of Dhār, and for some time between 1821 and 1835 it was under British management. After the rebellion of 1857 it was confiscated, and in 1860 was assigned to the Bhopāl State as a reward for services rendered during the Mutiny.

The population in 1901 was 204,445, of whom Hindus numbered 140,047, or 69 per cent., and Musalmāns 52,868, or 26 per cent. The *nizāmat* contains two towns, BHOPĀL CITY (population, 77,023) and BERASIĀ (4,276), the head-quarters; and 842 villages. It is divided for administrative purposes into six *tahsīls*, each under a *tahsīldār*, with head-quarters at Berasiā, Islāmnagar, Devipura, Dīwānganj, Durāhā, and Nāzīrābād, the whole being in charge of a *Nāzim* whose head-quarters are at Berasiā. The total revenue is 3·6 lakhs. At Islāmnagar stands a fort built by Dost Muhammad in 1716, which was his principal stronghold; it was afterwards (1736) greatly strengthened and beautified by Baijī Rām, minister to Nawāb Faiz Muhammad. Sindhia held Islāmnagar fort from 1806 to 1817, when it was restored to Bhopāl by treaty. At SĀNCHĪ and in its neighbourhood are numerous archaeological remains of great antiquity. The district is traversed by the metalled road from Sehore to Narsinghgarh.

Nizāmpatam.—Seaport in the Tenāli *tāluk* of Guntūr District, Madras, situated in 15° 55′ N. and 80° 41′ E. Population (1901), 4,216. During the five years ending 1883–4 the value of the imports and exports averaged respectively Rs. 1,12,250 and Rs. 2,56,000, but in 1903–4 they had fallen to Rs. 230 and Rs. 5,300. Nizāmpatam was

the first port on the east coast of India at which the English began to trade. They landed there in 1611, sent goods on shore, and left two supercargoes, picking them up again on the ship's return from Masulipatam. A factory was established in 1621. The English called it Pettipollee from the neighbouring village of Pedapalle. The place was ceded to the French by the Nizām as part of the NORTHERN CIRCARS, but was granted to the English by Salābat Jang in 1759.

Nizām's Dominions.—Native State in Southern India. *See* HYDERĀBĀD STATE.

Noa Dihing.—River in Lakhimpur District, Eastern Bengal and Assam. *See* DIHING, NOA.

Noākhāli District.—District in the Chittagong Division of Eastern Bengal and Assam, lying between 22° 10′ and 23° 18′ N. and 90° 42′ and 91° 35′ E., with an area of 1,644 square miles. The District is named from a watercourse called the Noākhāli (or 'new cut'), on the right bank of which Sudhārām, the head-quarters, is built. It is bounded on the north by the District of Tippera and the State of Hill Tippera; on the east by Chittagong District and the Sandwīp channel; on the south by the Bay of Bengal; and on the west by the Meghnā estuary.

Physical aspects.

The District consists of a tract of mainland together with a large number of islands in the mouth of the Meghnā, the largest of which are SANDWĪP and HĀTIA. The mainland is an alluvial plain broken only by a hilly tract in the extreme north-east corner, known as Baraiya Dhāla. The plain dips in the centre, forming a depression between the high bank of the Meghnā and the uplands in the north-east. The great estuary of the MEGHNĀ, here some 7 miles in breadth, sweeps past the western face of the District, beyond which lies Backergunge, and then follows the eastward trend of the coast, separating the mainland from the islands. The Hātia island divides it into two arms, of which the western is called the Shāhbāzpur river, because it separates Hātia from the island of Dakhin Shāhbāzpur in Backergunge District. As it passes eastward between Siddi island and the mainland, the Meghnā changes its name to the Bāmni. It then turns south between Sandwīp island and the coast of Chittagong, and in this final stage of its career it is called the Sandwīp channel. The approaches of the Meghnā estuary are rendered dangerous by the bore which rushes up these great arms of the sea at every new and full moon, and especially at the time of the equinox.

The chief tributaries of the Meghnā are the FENNY and Little Fenny rivers, which are navigable throughout the year. Both of them rise in Hill Tippera State, and flow in a generally south-westerly direction. The Fenny receives the Muharī on its right bank. The Dākātia river

formerly found an exit at Raipur, but the bulk of its waters now flow westwards into the Meghnā, at Chāndpur in Tippera District.

The coast-line is moving southwards, built up by deposits of silt from the Meghnā, and Hātia island especially is extending rapidly in this direction. On the other hand, the sea is encroaching on Sandwīp island and on some parts of the mainland. Besides the great islands already mentioned, there are Nalchira which adjoins Hātia on the south, Bayley, Jabar, King, Behāri, and others. The settlement of the land revenue upon these islands as they gradually emerge from the bay and become cultivable is one of the problems of the administration of the District.

The surface consists of recent alluvial deposits of clay and sand from the Meghnā and its tributaries, except in the north-east, where there are hills of the Upper Tertiary formation.

The extensive groves of betel-nut palm (*Areca Catechu*) for which the north-west of the District is famous, give a forest-clad appearance to the country. There are numerous creeks and *khāls*; but the great quantity of fresh water brought down by the large rivers renders the conditions unfavourable for salt-marsh species, so that the vegetation characteristic of the Sundarbans is but sparingly represented, and the plant-life of the District is almost exclusively confined to the ordinary field crops and weeds of the lower Gangetic plain. *Sāl* (*Shorea robusta*), *chāplās* (*Artocarpus Chaplasha*), *jārul* (*Lagerstroemia Flos Reginae*), *garjan* (*Dipterocarpus turbinatus*), and *gamhār* (*Gmelina arborea*) grow in the north-eastern uplands; and the coco-nut palm thrives all along the sea-board. There is a small forest on Tun island, which is worked as a 'reserve.'

Tigers, leopards, and barking-deer are found in the hills in the north-east, where peafowl are also occasionally met with. Crocodiles and pythons are numerous.

The temperature is moderate; the mean varies from 80° to 83° between May and October, and the mean maximum does not exceed 89°. Humidity is very high, never falling below 85 and reaching 89 per cent. of saturation in October. The rainfall is heavy, the annual average being no less than 115 inches. It commences early with 3 inches in March, 4 in April, and 11 in May, while in June, July, and August the average fall is 22, 25, and 25 inches respectively.

The position of the District renders it especially liable to destructive inundations from the bores at the mouth of the Meghnā which have already been referred to. It suffered severely from the cyclone of 1876, when Hātia lost more than half and Sandwīp nearly half of its inhabitants. This cyclone was followed by a terrible epidemic of cholera, and the mortality from both causes was estimated at 100,000.

History.

Little is known of the early history of Noākhāli, but it is supposed that the first Muhammadan settlements were made at the time of the invasion of south-east Bengal by Muhammad Tughril in 1279. In 1353 the country was overrun by Shams-ud-dīn, governor of Bengal. The island of Sandwīp was noticed by European travellers in the sixteenth century as an exceptionally fertile spot. In the seventeenth century the Portuguese played an important part in the affairs of this part of the country. Numerous adventurers and masterless men had entered the service of the Rājā of Arakan, who, at the end of the sixteenth century, included Chittagong in his dominions. Expelled from Arakan in 1605, they betook themselves to piracy, and succeeded in defeating a Mughal fleet sent against them. In 1609 they seized Sandwīp island, and under the leadership of one Gonzales became the terror of the coasts. In 1610 the Rājā of Arakan joined with the Portuguese in an attempt to take possession of Bengal, but after some successes the allies were routed by the Mughal troops. Gonzales next induced the viceroy at Goa to join him in an attack on Akyab, but the expedition proved a failure, and in 1616 the Rājā defeated Gonzales and took possession of Sandwīp. In 1664 Shaista Khān, governor of Bengal, won over the Portuguese by threats and cajolery and transported them to Dacca, where their descendants are still to be found; he thus made the way clear for the capture of Chittagong in 1666. The District passed into the hands of the East India Company in 1765, at which time it and Tippera District were included in the *ihtimām* of Jalālpur. This was in charge of two native officers until 1769, and from that date until 1772 of three English Supervisors. In 1772 a Collector was appointed; but the District was administered from Dacca till 1781, when Tippera and Noākhāli were constituted a single revenue charge known as Bhuluā. In 1787 this charge was added to the collectorship of Mymensingh, but in 1790 it was again separated and the head-quarters were transferred to Tippera. In the latter year a Salt Agent was appointed at Sudhārām to superintend the manufacture of salt on the islands, and apparently acted as an assistant of the Collector of Tippera. Noākhāli was first detached from Tippera and constituted a District in 1822, the criminal administration being made over to a Joint-Magistrate and the Salt Agent being vested with the powers of a Collector; the former appears to have also held charge of the Collector's office from 1832 to 1860, when a regular Collector was appointed. Although the name of Noākhāli was adopted in 1822 as the designation of the Joint-Magistrate's jurisdiction, the District was in respect of revenue jurisdiction known as Bhuluā from that year till 1868, when the popular name of Noākhāli was first employed.

On account of the cyclone of 1876 the population declined from

840,376 in 1872 to 820,772 in 1881; but it has since been increasing by leaps and bounds, having risen to 1,009,693 in 1891, and to 1,141,728 in 1901. Its Muhammadan inhabitants are prolific, the soil is very fertile, the climate is fairly healthy, and all the conditions are favourable to a rapid growth of population. The large gain of 13·1 per cent. during the last decade was entirely due to natural development, unaided by immigration. The increase has been greatest in the north-west of the District, where the people have benefited by the expansion of jute cultivation. Although the inhabitants are, on the whole, healthy, the water-supply is very inferior, being usually derived from the shallow tanks or ditches from which earth has been taken to raise the plinths of the houses. The general elevation is so low that, except along the banks of certain rivers, all houses have to be built on artificial mounds; each man erects his residence in the middle of his fruit trees and cultivation, and there are few of the crowded village sites so common farther west.

Population.

The principal statistics of the Census of 1901 are shown below:—

Subdivision.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Noākhāli . .	1,301	1	1,955	822,891	632	+ 14·4	49,859
Fenny . .	343	...	678	318,837	930	+ 9·7	11,819
District total	1,644	1	2,633	1,141,728	694	+ 13·1	61,678

The only town is SUDHĀRĀM, the head-quarters of the District. The language spoken is the corrupt dialect of Bengali known as Chatgaiyā from Chittagong. Muhammadans number 866,290, or 76 per cent. of the total, and Hindus 274,474.

Nearly all the Muhammadans are Shaikhs, and the majority are probably descendants of local converts to Islām. They belong to the puritanical sect of Farāzis. The Jugis (47,000) are a weaving caste, and the rest of the caste in Eastern Bengal regard the family of Dallāl Bāzār in this District as the head of their race. Next come the fishing and cultivating aboriginal castes of Kaibarttas (38,000) and Chandāls (27,000). The number of Kāyasths (34,000) is swelled by the pretensions of members of lower castes who have got on in the world and now claim to be Kāyasths. Most of the Hindu castes in this District have suffered in the estimation of their fellows owing to the outrages perpetrated by the Maghs when they overran the District. This has led in many cases to the formation of sub-castes, known as Maghia, with whom members of the same castes residing elsewhere refuse to eat or intermarry. No less than 78 per cent. of the population are agricul-

turists; 8 per cent. live by industry, 2 per cent. belong to the professions, and less than 7 per cent. are general labourers.

Roman Catholic and Baptist missions are at work in Noākhāli, but they have gained very few converts. The number of native Christians in 1901 was only 158.

Agriculture.

The soil is a rich alluvium, annually inundated and fertilized by valuable deposits of silt from the Meghnā estuary, in which the Ganges and the Brahmaputra river systems converge.

The chief agricultural statistics for 1903–4 are shown below, areas being in square miles:—

Subdivision.	Total.	Cultivated.	Cultivable waste.	Forests.
Noākhāli	1,301	1,002	47	5
Fenny	343	268	14	...
Total	1,644	1,270	61	5

Nearly 22 per cent. of the cultivated area yields two crops annually. By far the most important product is rice, which occupies 82 per cent. of the total area under cultivation. Three-fourths of it is harvested in the winter and the remainder in the autumn. The winter crop is generally transplanted, but the early rice is sown broadcast. The central *thānas*, however—Begamganj, Rāmganj, and the east of Lakshmīpur—lie so low that transplantation is often impossible, and here the autumn and winter rice are sown broadcast together. Pulses occupy 9 per cent. of the net cropped area, and linseed and other oilseeds 5 per cent. The cultivation of jute is spreading, but in the District as a whole it is not as yet a crop of much importance. Little manuring is practised, as the fertile soil, renovated annually by deposits of silt from the overflowing rivers, bears rich crops year after year without exhaustion; the heavy and regular rainfall also precludes the necessity for irrigation. Every house is surrounded by groves of betel-nut and coco-nut palms.

Cultivation is gradually extending upon the newly formed islands at the mouth of the Meghnā. Agricultural loans under the Acts are rarely taken, though in 1896, when the crops partially failed, Rs. 23,000 was borrowed.

Buffaloes and cattle are plentiful and find abundant pasturage on the islands, but there is little on the mainland. The cattle are very inferior, and suffer greatly from both rinderpest and foot-and-mouth disease.

The local arts and manufactures are few and unimportant. A little cotton cloth is woven, and coco-nut oil is manufactured; bamboo mats

and baskets, fishing nets, and agricultural implements are made, but only in sufficient quantities to meet local requirements.

Trade and communications.

The principal exports are rice, betel-nuts, coco-nuts, linseed, chillies and onions, hides, and eggs; and the principal imports are European piece-goods, salt, kerosene oil, mustard oil, tobacco, sugar, *gur*, cotton yarn, brass and bell-metal articles, hill bamboos, china-ware, and betel-leaves. Noākhāli is one of the largest rice-producing Districts in Eastern Bengal, and it has been estimated that a quarter of a million tons are exported every year; the bulk of it finds its way to either Calcutta or Chittagong for shipment oversea.

The Assam-Bengal Railway traverses the east of the District, and a branch line from Lākshām to Sudhārām has recently been opened. Excluding 227 miles of village tracks, the District contains 357 miles of roads, of which only 8 are metalled. The Chittagong trunk road to Dacca passes through the east of the District and is maintained as a Provincial work; the other important roads connect Sudhārām with Fenny, with Comilla, and with the west of the District. During the rains most of the traffic is by water along artificial channels which follow the principal roads. Bhawānīganj and Sudhārām are connected with Barisāl by a regular steamer service. Important ferries connect the islands of Sandwīp and Hātia with the mainland, and cross the Fenny and Little Fenny rivers on the Chittagong-Dacca road.

Administration.

For administrative purposes the District is divided into two subdivisions, with head-quarters at SUDHĀRĀM and FENNY. The Magistrate-Collector is assisted by four Deputy-Magistrate-Collectors, besides two Sub-Deputy-Collectors at Sudhārām, a Deputy-Collector at Fenny, and a Sub-Deputy-Collector at Sandwīp.

For the disposal of civil work the courts subordinate to the District and Sessions Judge are those of three Munsifs at Sudhārām, two each at Lakshmīpur and Fenny, and one each at Sandwīp and Hātia, besides that of an additional Munsif for Sandwīp and Lakshmīpur. The criminal courts include those of the Sessions Judge, the District Magistrate, and the above-mentioned magistrates. The people are extremely litigious, but violent crime is rare; burglary, theft, arson, cattle-poisoning, and perjury are the commonest offences.

Of the current land revenue demand for 1903-4, which amounted to 6.68 lakhs, 4.61 lakhs was due from 1,544 permanently settled estates, Rs. 59,000 from 49 temporarily settled estates, and 1.48 lakhs from 235 estates managed direct by Government. Of the last, 216 estates paying 1.41 lakhs belong to Government. The temporarily settled and Government estates are situated upon the islands at the mouth of the Meghnā; survey and settlement proceedings are in pro-

gress in these estates, which are resettled periodically for short terms, generally for fifteen years. The rates of rent here vary from 7 annas to Rs. 2–12–9 per acre, the average being Rs. 2–3–3. Reclaiming tenures are common in the newly formed lands; they are usually of a permanent character and extend to several degrees of subinfeudation. The highest grade of tenure is usually called a *tāluk*, and below it are the *haolā* and *shikmī*; all these are governed by Regulation VIII of 1819, but not the subordinate tenures, which go by the names of *osat-tāluk*, *nim-haolā*, and *darshikmī*. Part of the estate known as CHAKLA ROSHNĀBĀD, which belongs to the Rājā of Hill Tippera, lies within the District. In this estate the all-round rate of rent per acre paid by settled and occupancy ryots is Rs. 3–10–4, the incidence on each cultivated acre being Rs. 4–4–8. The average size of each holding is 6·7 acres, of which 5·7 acres are cultivated.

The following table shows the collections of land revenue and total revenue (principal heads only), in thousands of rupees:—

	1880–1.	1890–1.	1900–1.	1903–4.
Land revenue . .	6,32	6,34	6,36	7,11
Total revenue . .	10,48	11,02	12,77	13,78

Outside the Sudhārām municipality, local affairs are managed by the District board, with subdivisional local boards. In 1903–4 the income of the District board was Rs. 1,34,000, of which Rs. 66,000 was derived from rates; and the expenditure was Rs. 1,53,000, including Rs. 74,000 spent on public works and Rs. 42,000 on education.

The District contains 9 *thānas* (or police stations) and 5 outposts. The force under the District Superintendent in 1903 numbered 3 inspectors, 20 sub-inspectors, 22 head constables, and 237 constables; the rural police consisted of 201 *daffadārs* and 2,118 *chaukīdārs*. The District jail at Sudhārām has accommodation for 149 prisoners, and a subsidiary jail at Fenny for 23.

Noākhāli lags behind the neighbouring Districts in education, and only 5·4 per cent. of the population (10·5 males and 0·3 females) were literate in 1901. The total number of pupils rose from 32,855 in 1881–2 to 52,954 in 1892–3. It fell again to 41,485 in 1900–1; but 48,418 boys and 5,218 girls were at school in 1903–4, being respectively 56·7 and 6·1 per cent. of those of school-going age. The number of educational institutions, public and private, in that year was 1,770, consisting of 54 secondary, 1,373 primary, and 343 special schools. The expenditure on education was 1·45 lakhs, of which Rs. 13,000 was met from Provincial funds, Rs. 40,000 from District funds, Rs. 2,000 from municipal funds, and Rs. 81,000 from fees.

Medical relief has made substantial progress in recent years. In

1903 the District contained 13 dispensaries, of which 2 with 24 beds had accommodation for in-patients. Treatment was afforded during the year to 149,000 out-patients and 343 in-patients, and 4,000 operations were performed. The expenditure was Rs. 15,000, of which Rs. 2,000 was met from Government contributions, Rs. 9,000 from Local and Rs. 600 from municipal funds, and Rs. 3,000 from subscriptions.

Vaccination is not compulsory except in Sudhārām municipality, and there is a good deal of opposition to it. In 1903–4 the number of successful vaccinations was 37,000, representing 32·3 per 1,000 of the population.

[Sir W. W. Hunter, *Statistical Account of Bengal*, vol. vi (1876); J. G. Cumming, *Settlement Report of the Chākla Roshnābād Estate* (Calcutta, 1899).]

Noākhāli Subdivision.—Head-quarters subdivision of Noākhāli District, Eastern Bengal and Assam, lying between 22° 10′ and 23° 10′ N. and 90° 40′ and 91° 33′ E., with an area of 1,301 square miles. It consists of a tract of mainland, which is a recent alluvial formation, and of several islands on the face of the Bay of Bengal at the mouth of the Meghnā, the largest of which are SANDWĪP and HĀTIA. In 1901 the population was 822,891, compared with 719,163 in 1891, the density being 632 persons per square mile. There is one town, SUDHĀRĀM (population, 6,520), the head-quarters, and 1,955 villages.

Noākhāli Town.—Head-quarters of Noākhāli District, Eastern Bengal and Assam. *See* SUDHĀRĀM.

Nobosophoh.—Petty State in the Khāsi Hills, Eastern Bengal and Assam. The population in 1901 was 1,555, and the gross revenue in 1903–4 was Rs. 500. The principal products are rice, maize, and potatoes. Lime is found in the State, but is not worked.

Noh.—*Tahsīl* of Gurgaon District, Punjab. *See* NŪH TAHSĪL.

Nohar.—Head-quarters of a *tahsīl* of the same name in the Reni *nizāmat* of the State of Bīkaner, Rājputāna, situated in 29° 11′ N. and 74° 47′ E., about 129 miles north-east of Bīkaner city, and 58 miles west of Hissār. Population (1901), 4,698. The town possesses a fort (now in a dilapidated condition), a post office, a vernacular school attended by 80 boys, and a hospital with accommodation for 7 in-patients. At Gogāno, a village 16 miles to the east, a cattle fair is held in August and September; it is called the Gogāmeri fair after Gogā, a Chauhān Rājput, who became a Musalmān, and is said to have held sway from Hānsi to the Sutlej in the thirteenth century. The *tahsīl* contains 170 villages, almost all of which are held on the *jāgir* tenure by Rājputs of the ruling clan. Jāts form 34 per cent. of the population.

Nokrek.—The highest peak in the range of hills on the western slope of which lies Turā, the head-quarters of the Gāro Hills District,

Eastern Bengal and Assam. This range rises sharply from the lower hills by which it is surrounded, and the summit and sides are clad in dense tree forest. Nokrek is situated in 25° 27′ N. and 90° 19′ E., and reaches a height of 4,652 feet above the level of the sea.

Nolambavādi (or Nonambavādi).—The territory of the Nonamba or Nolamba kings, a 'thirty-two thousand' province[1], corresponding generally with the Chitaldroog District of Mysore. The Nonambas or Nolambas were a branch of the Pallavas, the early rulers of the Telugu country and other parts of Madras, and their name appears from the ninth century. The existing Nonabas in Mysore represent the former inhabitants of Nonambavādi.

Nongkhlao.—Petty State in the Khāsi Hills, Eastern Bengal and Assam. The population in 1901 was 9,715 and the gross revenue in 1903–4 was Rs. 2,350. It was near Nongkhlao that Lieutenants Bedingfield and Burlton were massacred in 1829 with 50 or 60 natives, an event that led to a struggle with the Khāsis, which was not terminated till 1833. The principal products of the State are potatoes, rice, millet, and maize. The only manufactures are iron axes and hoes.

Nonglewai.—Petty State in the Khāsi Hills, Eastern Bengal and Assam. The population in 1901 was 169, and the gross revenue in 1903–4 was Rs. 40. The principal products are millet, rice, and potatoes.

Nongspung.—Petty State in the Khāsi Hills, Eastern Bengal and Assam. The population in 1901 was 1,859, and the gross revenue in 1903–4 was Rs. 880. The principal products are rice, potatoes, and honey. Iron is found in the State, but is not worked.

Nongstoin.—Petty State in the Khāsi Hills, Eastern Bengal and Assam. The population in 1901 was 9,606, and the gross revenue in 1903–4 was Rs. 7,610. The principal products are lac, honey, cotton, bay-leaves, rice, and millet. The manufactures include rough pottery, cotton cloth, billhooks, and hoes. Lime and coal are found in the State, but only the former is worked.

North Arcot.—District in Madras. *See* ARCOT, NORTH.

North Barrackpore.—Town in the District of the Twenty-four Parganas, Bengal. *See* BARRACKPORE.

North Cāchār.—Subdivision of Cāchār District, Eastern Bengal and Assam. *See* CĀCHĀR, NORTH.

North Dum-Dum.—Town in the District of the Twenty-four Parganas, Bengal. *See* DUM-DUM.

North Kanara.—District in Bombay. *See* KANARA, NORTH.

North Lakhimpur.—Subdivision of Lakhimpur District, Eastern Bengal and Assam. *See* LAKHIMPUR, NORTH.

[1] These numerical designations, almost invariably attached to the names of ancient divisions in Mysore, apparently refer to their revenue capacity or to the number of their *nāds*.

Northern Circārs.—Historic name of the northern portion of the Madras Presidency. *See* CIRCĀRS, NORTHERN.

Northern Division (Bombay).—The most northern Division of the Bombay Presidency proper, lying between 18° 53′ and 23° 37′ N. and 71° 19′ and 74° 29′ E., with an area of 13,710 square miles. It comprises the Districts of AHMADĀBĀD, KAIRA, PĀNCH MAHĀLS, BROACH, SURAT, and THĀNA. It is bounded on the north by Rājputāna; on the east by the spurs of the Vindhyas, Sātpurās, and Western Ghāts; on the south by the Central Division and the Kolāba District of the Southern Division; and on the west by Kāthiāwār and the Arabian Sea. The head-quarters of the Commissioner are in Ahmadābād city. It has a population of 3,513,532, of whom 786,089 reside in urban areas. The population, which had increased by 9 per cent. between 1881 and 1891, decreased by 10 per cent. during the next decade owing to the famine of 1899–1900. The Division, though the smallest in the Presidency proper, is the most thickly populated (average density 256 persons per square mile). In 1901 Hindus numbered 84 per cent. of the total, Musalmāns 9 per cent., Jains 2 per cent., and Christians 2 per cent., while other religions included Sikhs (604), Buddhists (27), Pārsīs (22,543), Jews (609), and Animists (58,230).

The population and revenue of the Division are shown below:—

District.	Area in square miles.	Population, 1901.	Land revenue and cesses, 1903-4, in thousands of rupees.
Ahmadābād . . .	3,816	795,967	16,45
Kaira	1,595	716,332	22,74
Pānch Mahāls . .	1,606	261,020	3,54
Broach . . .	1,467	291,763	23,45
Surat	1,653	637,017	25,49
Thāna	3,573	811,433	16,14
Total	13,710	3,513,532	1,07,81

The first five of these Districts are in Gujarāt and are very fertile. The Division contains 47 towns and 4,950 villages. The largest towns are AHMADĀBĀD (population, 185,889) and SURAT (119,306). Other towns with a population over 20,000 are: BĀNDRA (22,075), BROACH (42,896), GODHRA (20,915), and NADIĀD (31,435). The chief places of commercial importance are Ahmadābād, Surat, and Broach. The KĀNHERI CAVES in Thāna District and the Musalmān buildings in Ahmadābād city are of great archaeological and historic interest. DĀKOR in Kaira District is an important place of pilgrimage.

Under the supervision of the Commissioner of the Northern Division are the Political Agencies shown in the following table:—

Agency.	Name of State.	Area in square miles.	Population, 1901.	Gross revenue, 1903-4, in thousands of rupees.
Mahī Kāntha .	Idar and 62 smaller States	3,528	361,545	11,41
Pālanpur . .	Pālanpur, Rādhanpur, and 8 small States . .	8,000	467,271	13,12
Rewā Kāntha .	Bālāsinor, Bāriya, Chota Udaipur, Lūnāvāda, Rājpīpla, Sunth, and 5 minor States and 2 *thāna* circles of 50 *tālukas* . . .	4,980	479,065	21,07
Kaira . .	Cambay	350	75,225	5,54
Surat . .	Bānsda, Sachīn, Dharampur, and the Dāngs estate .	1,960	179,975	12,43
Thāna . .	Jawhār	310	47,538	1,73

Northern Shan States.—Group of States in Burma. *See* SHAN STATES, NORTHERN.

North-Western Provinces.—Old name of the province of AGRA.

North-West Frontier Province.—A newly constituted Province lying between 31° 4′ and 36° 57′ N. and 69° 16′ and 74° 7′ E. Its extreme length between these parallels is 408 miles, and its extreme breadth between these meridians 279 miles. The approximate area is 38,665 square miles, of which only 13,193 are British territory, the remainder being occupied by the tribes under the political control of the Agent to the Governor-General. As its name denotes, the Province is situated on the north-west frontier of the Indian Empire. On the north it is shut off from the Pāmirs by the mountains of the Hindu Kush; on the south it is bounded by Baluchistān and the Dera Ghāzi Khān District of the Punjab; on the east by the territories of the Mahārājā of Kashmīr and by the Punjab; on the west by Afghānistān.

Physical aspects.

The territory falls into three main geographical divisions: the cis-Indus District of Hazāra; the comparatively narrow strip between the Indus and the hills constituting the Districts of Peshāwar, Kohāt, Bannu, and Dera Ismail Khān; and the rugged mountainous regions on the north and west between those Districts and the borders of Afghānistān.

Hazāra District forms a wedge extending north-eastwards far into the Outer Himālayan range, and tapering to a narrow point at the head of the Kāgān valley. The mountain chains which enclose the Kāgān defile sweep southwards into the broader portion of the District, throwing off well-wooded spurs which break up the country into numerous isolated glens. Towards the base of the wedge, on the confines of the Attock District of the Punjab, the hills open out and fertile plains take the place of the terraced hill-sides and forests of the

northern uplands. The tract between the Indus and the hills comprises four minor natural divisions, each of which forms a separate District. The most northern is the Peshāwar valley, a lacustrine basin encircled by hills. To the south of Peshāwar lies Kohāt, a rugged table-land broken by low ranges of hills and separated from Peshāwar by the Jowāki range. South of Kohāt again is Bannu, in the broad basin of the Kurram river and completely surrounded by low ranges. The District of Dera Ismail Khān stretches south of Bannu, a vast expanse of barren plain enclosed between the Sulaimān range on the west and the Indus on the east, and tapering to a blunt point at its southern extremity.

The regions between these Districts and the Afghān frontier are equally varied, but wilder and more rugged in character. The hills are loftier, often rising into ranges of great height, and the intervening valleys are narrower and more inaccessible. On the north, vast territories between the Hindu Kush and the border of Peshāwar District form the Political Agency of Dīr, Swāt, and Chitrāl. Of these territories, Chitrāl, the most northern, is a region of deep valleys and lofty ranges, for the most part bare and treeless. Farther south lie the thickly wooded hills of Dīr and Bājaur, and the fertile valleys of the Panjkora and Swāt rivers. South-west of this Agency are the Mohmand hills, a rough and rocky tract with little cultivation. Farther south comes the narrow gorge of the Khyber Pass, leading westwards from Jamrūd on the Peshāwar border into Afghānistān. South of the pass lies Tīrāh, the maze of mountains and valleys held by the Afrīdi and Orakzai tribes, and bounded on the western extremity of its northern border by the Safed Koh. Farther west this range still forms the border of the Province, and flanks the Kurram valley in the Political Agency of that name. This fertile valley stretches south-eastwards from the great peak of Sikarām, in which the Safed Koh culminates, and the Peiwar Kotal pass to the western extremity of the Mīrānzai valley in Kohāt. South of Kurram lies Wazīristān, a confused mass of hills, intersected on the north by the Tochi valley and on the south by the gorges that descend to the Wāna plain. The hills are for the most part barren and treeless, but on some of the higher ranges, such as Shawāl and Pīr Ghal, fine forests are found. The valleys also broaden out into plains, and form fertile and well-irrigated dales. Such are Daur, as the lowlands of the Tochi valley are called, and Kaithu in Northern Wazīristān, and the Wāna plain and the valley below Kāniguram in the south. The Wazīr hills are divided into two Political Agencies: Northern Wazīristān, with its head-quarters in the Tochi valley; and Southern Wazīristān, with its head-quarters at Wāna. In the latter Agency the Wazīr hills merge into the Sulaimān range, the highest point of which is the far-famed Takht-i-Sulaimān in the lower

Shirāni country, a political dependency of Dera Ismail Khān District. The precipitous Takht presents the grandest scenery on the frontier and forms an impassable barrier between the North-West Frontier Province and Baluchistān.

Hazāra District lies on the east bank of the Indus among the confused mass of mountains formed by the meeting of the Outer and Mid-Himālayan ranges. From this mass the two mountain walls which enclose Kāgān, run in unbroken lines to where they meet at the Babusar pass (13,589 feet). West of the Indus the mighty range of the Hindu Koh, usually called the Hindu Kush, or Indian Caucasus runs almost due east and west along the north-eastern and northern frontiers of the Province, and at its north-eastern corner meets a continuation of the Outer Himālayan chain which crosses the Indus above the Kāgān valley. From this chain minor ranges descend in a north-westerly direction, traversing Bājaur and Swāt, until they meet the curved range of hills which connects the Mid-Himālaya with the Safed Koh and encircles the Peshāwar valley on the north.

From the Dorāh pass on the Hindu Kush a long broken line of mountains runs almost due south, dividing the Province from Kāfiristān and farther south from other parts of Afghānistān. It is pierced at Arnawai by the Chitrāl river, which runs thence, under the name of the Kunar, parallel with it in Afghān territory. Thus the Hindu Kush and the two ranges which run southward from it enclose the Dīr, Swāt, and Chitrāl Agency, the whole intervening space being filled by the minor ranges which descend from them. The western line is again pierced after its junction with the Kunar by the Kābul river, south of which it merges in the Khyber hills, which form the eastern extremity of the Safed Koh.

The Safed Koh also runs almost due east and west, forming the watershed between the Kābul and Kurram rivers. Eastwards minor ranges descend from its southern slopes to the Indus. The Sulaimān range runs up the western border of the Province to meet the Safed Koh, and also throws out a series of parallel spurs to the east. These traverse the whole of Kohāt District. The Sheikh Budīn range, the southern extremity of the Salt Range, forms the boundary between Bannu and Dera Ismail Khān, and merges eventually in the Sulaimān range.

With the exception of the Kunhār river in Hazāra, which flows down the Kāgān valley into the Jhelum, the whole territory drains into the Indus. That river divides the Province from Chilās for some miles and then enters it north of the Black Mountain. Farther south it separates Hazāra from the Gadūn territory and Peshāwar, and then forms the eastern boundary of the Province to its southern extremity, only the Isa Khel *tahsīl* of the Miānwāli District of the Punjab lying

on its western bank. Its whole course is to the south with a westerly trend, and it forms the great natural waterway of the Province. Into it flow the mountain streams of Hazāra, the Unar, Siran, Dor, and Harroh, on the eastern bank; but these are insignificant compared with its western tributaries, of which the chief are the Landai and Kurram. The former joins it at Attock and the latter below Isa Khel.

The Landai, by which name the Kābul and Swāt rivers are called below their junction, drains Kohistān, Swāt, Dīr, Chitrāl, Tīrāh, and Peshāwar District; but these vast territories have but a small rainfall, and, as much of the water is used for irrigation, it is nowhere a great river. Its principal tributaries are the Chitrāl, which rises in the Hindu Kush; the Swāt, which rises in the hills north-east of Buner, and after receiving the waters of the Panjkora joins the Kābul river at Nisatta in Peshāwar District; and the Bāra, which drains Tīrāh and falls into the Kābul east of Peshāwar city.

The Kurram, rising in Afghān territory on the southern slopes of the Safed Koh, passes through the Kurram valley and the lower Wazīr hills into Bannu District. Three miles below Lakki it is joined by the Tochi or Gambīla, which drains Northern Wazīristān.

The geology of the North-West Frontier Province exhibits considerable diversity. The northern portion of Hazāra and the hills on the north-north-east border of Peshāwar are built up of crystalline, igneous, and metamorphic rocks, comprising chiefly a massive micaceous gneissose granite (sometimes containing schorl and garnets), as bands or sills among thin-bedded mica-schists and phyllites, much entangled with each other, and laid out in parallel flexure waves one behind the other. The axis of the folding of this zone is about north-east to south-west. In Hazāra a probably younger set of less metamorphosed sedimentary strata borders this zone on the south, consisting of a group of arenaceous and calcareous rocks known as the Tanāwals, which are infra-Trias in part. It seems probable that the granite is older than the Trias and possibly than the infra-Trias. All these formations are somewhat sparsely invaded by a plexus of basic dike rocks (dolerites) of still later age.

The middle portion of Hazāra is mainly composed of a very great, highly inclined, and irregularly cleaved slate series, sometimes graphitic, and very occasionally calcareous, in thin bands. It is probably very ancient—certainly older than the infra-Trias, from which it is separated by a striking unconformity. No fossils are known in it, and its base has never been recognized. The series outcrops in a westerly direction to Attock, where it is well exposed in the river section; and from there it continues to form the north half of the Cherāt hills, and parts at least of the Peshāwar valley near Naushahra. The slates and crystalline limestone (marble) near Attock and Naushahra are worked with some

success for building and ornamental purposes. The prevailing strike direction of the slates is east-north-east to west-south-west. The slate zone is bounded on the south by a sinuous line of faulting with over-thrust, from near the axis of the Cherāt hills to the Jhelum near its junction with the Kunhār river.

South and south-east of the great fault line (as well as in the form of outliers in parts of the slate zone) comes a great set of younger formations, stretching in gentle undulations right through the rest of Hazāra and Peshāwar, and the whole of Kohāt, Bannu, and Dera Ismail Khān. These younger formations are mainly higher Mesozoic, Tertiary, and post-Tertiary, but they also include limited outcrops and sub-zones of infra-Trias (Devonian ?), Permian, and Trias. With these younger formations begin much irregularity and sinuous winding of the strike, which coincides with the direction of the bare rock ridges, and also with what may most aptly be called the curling crests of the rock waves and undulations. These, by means of devious S-shaped curves, settle down to a north and south strike in Dera Ismail Khān District at the foot of the Sulaimān range. The curved direction of the crests of the folds expresses the buckling caused by the meeting along this portion of the earth's surface of the Himalāyan, Hindu Kush, and other more western systems of crust movement, setting in from three sides against the old and rigid gneissic rocks of Peninsular India.

The so-called infra-Trias of Hazāra—which consists of abasal conglomerate followed by purple sandstones, shales, and 2,000 feet of dolomitic limestone, quite unfossiliferous, and coming beneath the Trias—has only a restricted occurrence near Abbottābād at the base of the outliers of younger rocks. Its age may be Devonian [1], and it is not known elsewhere. Carboniferous strata are not certainly known in this Province. The Permo-Carboniferous formation exposed in strips along the axes of folds in the Sheikh Budīn and Khisor ranges consists of a glacial boulder-bed with striated and faceted blocks at the base, followed by 500 feet of magnesian and white limestone with sandstones and earthy beds, containing *Productus*, *Spirifer*, *Bellerophon*, corals, &c. In Hazāra the Permo-Carboniferous may be represented by a felsite and hematitic breccia, found unconformably overlying the infra-Trias (Devonian ?).

The Sheikh Budīn and Khisor ranges also expose a continuous section, without any physical break, up through the Trias, containing *Ceratites*, and corresponding with the Trias of the Salt Range of the Punjab. In Hazāra the Trias, represented by a massive dark-grey limestone containing *Megalodon* and *Dicerocardium*, and resembling

[1] Lieutenant-General McMahon, *Geological Magazine*, vol. ix, pp. 3–8 and 49–5, 1902; also vol. x, p. 52, 1903.

[2] A. B. Wynne, *Memoirs, Geological Survey of India*, vol. xvii, article 2.

that of Kashmīr, marks the beginning of a generally continuous zoological sequence upwards through the Jurassics, Cretaceous, and Nummulitics.

The Sheikh Budīn and Khisor Jurassics follow the Trias, and consist of thin-bedded, light buff-coloured limestones, sandstones, and clays, which have been supposed to be connected, palaeontologically, with those of Cutch. Elsewhere, in the Tochi valley and Peshāwar and the Sulaimān range, they probably occur, but have not been worked out. In Hazāra they have in part a Himālayan facies and embrace black, slightly micaceous Spiti shales (30–100 feet), with ferruginous concretions, containing an abundance of typical upper Jurassic forms, e.g. *Oppelia acucincta*, *Perisphinctes frequens*, *Belemnites geradi*, *Inoceramus*, *Cuculaea*, and *Pecten*.

The Cretaceous rocks of the southern Districts[1] follow above the doubtful Jurassics, and are represented by the belemnite bed, probably of neocomian age. In Hazāra 100 feet of Giumal sandstone, exactly resembling its Himālayan namesake, and coming above the Spiti shales in all sections, is also of the same age; and above it appears a very thin band of orange-coloured limestone, crowded with characteristic fossils of the middle Cretaceous (cenomanian) and equivalent to the Utatūr group of Southern India, e.g. *Acanthoceras mantelli*, *A. navicularis*, *A. rotomagensis*, *Schlaenbachia inflata*, together with *Anisoceras*, *Anclyloceras*, *Baculites*, *Terebratula*, *Echinoconus*, and *Micraster*. Similar rocks are known from the Samāna country.

The grey, concretionary, and black-hearted hill Nummulitic limestone and its subordinate shaly bands form a thick and solid basement bed for the rest of the Tertiary system, which attains to a very great thickness and importance all round the north-west frontier of India. From 1,000 to 1,500 feet of Nummulitic limestone and shales, followed by 9,000 feet of fresh-water deposits of Murree sandstone and Siwālik sandstones and conglomerates, are bent into long and gentle undulations, and, neglecting the narrow strips of older rocks, cover 90 per cent. of the country to the south of the slate zone and its reversed boundary fault. Near the base of the Nummulitic limestone in Hazāra is a variegated sandstone band with coaly matter, the probable equivalent of the Dandot coal of the Salt Range and that of Jammu. As a source of fuel the Hazāra band has yet to be proved to be of any great value. In the Kohāt salt region[2] the Nummulitics appear in a long series of inliers, forming ridges from east to west, and with marvellously developed masses of rock-salt, gypsum, and red clay or marls as cores to the anticlinal flexures of these ridges. Mineral oil, found near Mughal Kot,

[1] T. D. La Touche, *Records, Geological Survey of India*, vol. xxvi, pt. iii; and F. H. Smith, *Records, Geological Survey of India*, vol. xxviii, pt. iii.

[2] A. B. Wynne, *Memoirs, Geological Survey of India*, vol. xi, pt. ii.

has been described as issuing from the Nummulitic sandstones near their base[1]. The fossils of this great formation still require working out in detail, to bring them into zonal relation with what has been done in Sind and Baluchistān. While the Nummulitic limestone generally occurs in anticlinal arches and ridges of rock, the Siwālik series, composed in its lower part of soft grey sandstone and shales, forms lower-lying country flanking the slopes of the hills, and trough-like synclinals in the valleys. Miocene plant remains are known from the Murree sandstones, and mammalian remains have been gathered here and there from the Siwālik conglomerate, which ranges up to the pliocene in age.

The post-Tertiary and recent conglomerates, sands, and alluvial clays, sometimes reaching 300 feet in thickness, occupy large areas in the Province, and have grown out of the conditions that caused the Siwālik series. Nearly all the surface of the flat valleys, bordering the present river-beds, and the talus slopes at the foot of the scarps are composed of them. Evidence of old glacial moraines is found at about 6,000 feet in the Kunhār valley, and probably at many other intermediate levels in Kāgān between that and the melting-point of the glaciers of to-day.

The flora of the plains which occupy the south-east of the Province is practically the same as that of the adjoining portion of the Punjab, its main constituent being shrub jungle with a secondary element of trees and herbs. Among the more common plants of this region are: *Flacourtia sapida* and *F. sepiaria*, several species of *Grewia*, *Zizyphus nummularia*, *Acacia Jacquemontii* and *A. leucophloea*, *Alhagi camelorum*, *Crotolaria Burhia*, *Prosopis spicigera*, several species of *Tamarix*, *Nerium odorum*, *Rhazya stricta*, *Calotropis procera*, *Periploca aphylla*, *Tecoma undulata*, *Lycium europaeum*, *Withania coagulans* and *W. somnifera*, *Nannorhops Ritchieana*, *Fagonia*, *Tribulus*, *Peganum Harmala*, *Calligonum polygonoides*, *Polygonum aviculare* and *P. plebeium*, *Rumex vesicarius*, *Crozophora plicata*, species of *Aristida*, *Anthistiria*, *Cenchrus*, and *Pennisetum*.

The arid and stony hills of Wazīristān to the west only afford a foothold to a few brave species, like *Peganum Harmala*, *Calotropis*, *Rumex vesicarius*, *Crozophora plicata*, *Capparis aphylla*, &c.

Farther north in the Kurram valley the meagre vegetation consists of such plants as *Acacia modesta*, *Tecoma undulata*, *Sageretia Brandrethiana*, *Gymnosporia spinosa*, *Zizyphus vulgaris*, *Withania coagulans*, *Periploca aphylla*, *Nannorhops Ritchieana*, and several species of *Grewia*. On the banks of the Kurram grow species of *Tamarix*, *Dalbergia Sissoo*, *Nerium odorum*, *Zizyphus Jujuba* and *Z. oxyphylla*.

[1] T. H. Holland and T. D. La Touche, *Records, Geological Survey of India*, vol. xxiv, pt. ii, and vol. xxv, pt. iv (two notes).

with cultivated examples of mulberry, willow, and *nīm*. Higher up the Kurram *Platanus*, *Celtis*, *Ebenus stellata*, and walnut appear, while the vegetation characteristic of the Punjab becomes less and less conspicuous. Myrtle is also met with here. At altitudes over 2,000 feet *Sophora mollis*, *Daphne oleoides*, and *Cotoneaster nummularia* become prominent features, and up to about 10,000 feet constitute the greater proportion of the vegetation. Other species becoming more common with the rise in altitude are *Convolvulus lanuginosus*, *Onosma echioides*, *Salvia Moorcroftiana*, *Astragalus polyacantha*, and *Otostegia limbata*.

The plains north of the Kurram support several species of *Astragalus*, *Onobrychis*, *Othonnopsis intermedia*, *Stachys parviflora*, *Gypsophila Stewartii*, *Thymus Serpyllum*, *Convolvulus lanuginosus*, *Isatis tinctoria*, *Salvia glutinosa* and *S. rhytidea*, as well as those species already mentioned as forming the greater part of the vegetation above 2,000 feet.

On the Safed Koh range, except on its southern aspect, flourish *Quercus Ilex*, *Cotoneaster bacillaris*, *Buddleia*, *Desmodium tiliaefolium*, *Jasminum officinale* and *J. revolutum*, *Lonicera quinquelocularis*, *Abelia triflora*, *Viburnum cotinifolium*, *Rhamnus purpureus* and *R. dahuricus*, *Rosa Webbiana* and *R. moschata*, *Smilax vaginata*, *Hedera Helix*, *Indigofera Gerardiana*, *Plectranthus rugosus*, and *Perowskia atriplicifolia*. On the southern slopes of the Safed Koh grow *Pistacia integerrima* and *P. cabulica*, *Rhamnus persicus*, *Rhus Cotinus*, *Syringa persica*, *Caragana brevispina*, *Morina persica*, *Daphne*, *Sophora*, and *Cotoneaster*. The vegetation of the Safed Koh above 10,000 feet consists of species of *Silene*, *Primula*, *Geranium impatiens*, *Pedicularis*, *Myrtillus*, *Lonicera sericea*, *Isopyrum*, *Polypodium*, *Aconitum*, and *Botrychium*. *Pinus excelsa* and *Abies Webbiana* grow up to 11,000 feet, beyond which altitude the vegetation is composed of bushes of *Salix*, *Rhododendron*, *Ribes*, *Juniperus*, *Rheum Moorcroftianum*, and *Polygonum rumicifolium*.

North of the Kābul river the hills which enclose the Swāt, Dīr, Chitrāl, and other valleys show a curiously mixed flora. In the lower, confined, and consequently hot valleys such as the Swāt and Panjkora flourish quite a number of weeds which one would expect to find only in the plains of India. Among such may be mentioned: *Cleome viscosa*, *Tribulus terrestris*, *Crotalaria albida*, *Indigofera pulchella*, *Aeschynomene indica*, *Desmodium podocarpum*, *Luffa echinata*, *Datura Stramonium*, *Solanum nigrum*, *Sesamum indicum*, *Dicliptera Roxburghiana*, *Vitex Negundo*, *Plectranthus rugosus*, *Anisomeles ovata*, *Xanthium Strumarium*, *Sphenoclea zeylanica*, *Boerhaavia repens*, *Celosia argentea*, *Digera arvensis*, and *Aerua tomentosa*, &c. At higher elevations of about 5,000 to 6,000 feet there are arid tracts resembling the uplands of Baluchistān and supporting a similar vegetation, mainly composed of such plants as *Berberis Lysium*, *Malcolmia*, *Iris Stocksii*, *Capparis spinosa*, *Silene afghanica*, *Tamarix gallica*, *Myricaria ger-*

manica, *Peganum Harmala*, *Sageretia Brandrethiana*, *Pistacia*, *Alhagi camelorum*, *Sophora mollis*, *Rosa Beggeriana*, *Spinacia brahuica*, *Cotoneaster bacillaris*, *Myrrhis*, *Periploca aphylla*, *Paracaryum asperum*, *Daphne oleoides*, *Salix babylonica*, *Ixiolirion montanum*, *Fritillaria imperialis*, and *Tulipa chrysantha*. At higher altitudes of 6,000 feet and upwards the flora resembles that of Kashmīr, with the addition of a sprinkling of Central Asiatic and European species. As typical of these higher altitudes may be mentioned several species of *Clematis*, *Thalictrum*, *Anemone*, *Ranunculus*, *Aquilegia*, *Delphinium*, *Actaea spicata*, and *Paeonia anomala*. *Corydalis*, *Arabis*, and *Sisymbrium* are each represented by several species. There are three species of *Viola*. *Silene*, *Cerastium*, *Stellaria*, *Geranium impatiens*, *Prunus*, *Spiraea*, *Rubus*, *Potentilla*, *Rosa*, *Pyrus*, *Crataegus*, *Sedum*, *Epilobium*, *Bupleurum*, *Pimpinella*, *Anthriscus*, *Sonchus*, *Viburnum*, *Galium*, *Asperula*, *Valeriana*, *Campanula*, *Primula*, *Androsace*, *Fraxinus*, *Gentiana*, *Veronica*, *Pedicularis*, *Origanum*, *Nepeta*, *Rheum*, *Ulmus*, *Quercus*, *Juniperus*, *Abies*, *Pinus*, *Allium*, *Gagea*, *Juncus*, *Koeleria*, *Poa*, and *Secale* are all genera representative of the flora of the higher altitudes. *Picea Morinda*, *Abies Webbiana*, and *Pinus excelsa* form forests at higher levels. The prevailing oak is *Quercus Ilex*. Ferns, chiefly belonging to the genera *Adiantum*, *Pteris*, *Asplenium*, and *Nephrodium*, are not uncommon; there are, besides, not a few mosses [1].

Tigers used to be common in the Indus valley, but are now quite extinct in the Province; leopards, hyenas, wolves, jackals, and foxes are the chief carnivora. The black, and occasionally the red or brown, bear is found in Hazāra, and monkeys are rare except in that District. The hog deer is found in the Indus valley, the *gural*, musk deer, barking-deer, and ibex in Hazāra, and the 'ravine deer' (Indian gazelle), *mārkhor*, and *uriāl* in the western hills. Wild hog are found chiefly in the Indus valley.

A large variety of birds, including the Argus and other pheasants and numerous kinds of partridge, are found in Hazāra. In the rest of the Province the *chikor*, *sīsī*, grey and black partridge, sand-grouse, quail, the demoiselle crane, lesser bustards, geese, duck, and snipe are the chief game-birds. Bustards, plovers, pigeons, sandpipers, and coots are also found. The eagle and lämmergeyer are not uncommon, and there are many varieties of falcons, hawks, and harriers, some of which are tamed for hawking. The passerine tribe includes fly-catchers, orioles, thrushes, mynas, chats, swallows, larks, tits, and finches.

Many varieties of fish are caught in the Indus, the most important

[1] J. L. Stewart, *Punjab Plants* (1869); J. E. T. Aitchison, 'On the Flora of the Kurram Valley,' *Journal of the Linnean Society*, vols. xviii and xix; J. F. Duthie, 'The Botany of the Chitral Relief Expedition,' *Records, Botanical Survey of India*, vol. i, No. ix.

being the mahseer and *rohu*. Of snakes, the cobra, *karait* (*Echis carinata*), and Russell's viper are found, besides other species.

The North-West Frontier Province, stretching southward from the Bāroghil pass in the Hindu Kush, covers nearly six degrees of latitude. Mainly a mountainous region, but including the Peshāwar valley and the broad riverain tract of the Indus in Dera Ismail Khān District, its climatic conditions are extremely diversified, the latter District being one of the hottest areas in the Indian continent, while over the mountain region to the north the weather is temperate in summer and intensely cold in winter. The air is generally dry, and hence the daily and annual ranges of temperature are frequently very large.

The Province has two wet seasons: one, the monsoon, when moisture is brought up by the winds from the Arabian Sea and the Bay of Bengal; the other in winter, when storms from Mesopotamia, Persia, and the Caspian districts bring widespread rain and snowfall. Both sources of supply are precarious, and not infrequently either the winter or summer rainfall fails almost entirely.

In Chitrāl, the extreme north of the Province, the rainfall conditions are those of the temperate zone. The summer rainfall at Chitrāl is light, averaging only 4 inches for the six months May to October, out of which nearly 3 inches fall in the first and last months, while for the rest of the year the rainfall averages 13 inches. Farther south, in the neighbourhood of Peshāwar, the amounts received in the two seasons are approximately equal; while in the Himālayan District of Hazāra and in Kohāt, Bannu, and Dera Ismail Khān the summer rainfall is distinctly heavier than that of the winter. The area of lightest annual rainfall is the riverain District of Dera Ismail Khān (9 inches), and the heaviest that of Hazāra, Abbottābād having a total annual fall of 45 inches. In the central parts of the Province (including Peshāwar) the annual fall ranges from 10 to 25 inches, while in the north, at Chitrāl, it is about 17 inches. The winter rains ordinarily fall in the four months January to April, while the summer rainfall, except in Chitrāl, is mainly confined to July and August, the falls in the other months barely averaging half an inch.

During the winter months the wind ordinarily blows from a westerly direction and the weather is fine, with cold nights; but at intervals the sky clouds over, the wind changes to the southward, the temperature, particularly at night, rises, and a storm advances from the west. During its passage the wind is high, and rain and snow fall. After the passage of the storm the weather clears rapidly; a north-westerly wind, chilled by its passage over the snow-clad hills, sets in, and the night temperature falls considerably below freezing-point, even at the plains stations of Peshāwar and Dera Ismail Khān, while at the hill stations the frost on these occasions is very severe. These changes occur at

intervals throughout the winter till the end of March. During April and May strong, hot, westerly winds are experienced, the temperature rises quickly, and though storms of the cold-season type are not unknown during these months, they are now accompanied by lightning and thunder. Towards the end of June the westerly winds die down, the weather becomes close, damp, and steamy, and spasmodic advances of monsoon winds occur, giving occasional heavy downpours of rain, more particularly in Hazāra District. These conditions last, varying according to the strength and extent of the monsoon current in different years, until the middle of September. After that the weather clears, the temperature falls, and the finest and most settled months in the years are usually October and November, when in most parts of the area there is very little rain. The days are hot; but the mornings, evenings, and nights are cool and pleasant. Hailstorms of great violence are common in the late spring and early autumn.

The thermometer rises during the hottest part of the year to between 100° and 106° at Cherāt; to between 114° and 120° at Peshāwar; to between 115° and 122° at Dera Ismail Khān; to between 104° and 108° at Chitrāl; and to between 97° and 100° at Pārachinār. Slight frost is recorded almost every year in the plains, while intense frost is experienced on the hills. At Chitrāl in 1897 the thermometer fell to 5·4°, and the annual range of temperature at that station was close on 100°. At Pārachinār the minimum temperature was 11·8° in 1900, while at Peshāwar and Dera Ismail Khān it fell to about 28° in 1901, and the annual range at these two stations was about 90°. The lowest temperature recorded was *minus* 13° at Wāna in January, 1905.

History.

The key to the history of the North-West Frontier Province lies in the recognition of the fact that the valley of Peshāwar was always more closely connected politically with Eastern Irān (the ancient Ariana and modern Afghānistān) than with India, though in pre-Muhammadan times its population was mainly Indian by race.

Early history finds the Iranians dominating the whole Indus valley. At some date later than 516 B.C. Darius Hystaspes sent Scylax, a Greek seaman of Karyanda, to explore the course of the river, and subsequently subdued the races dwelling west of the Indus and north of Kābul. Gandhāra, the modern District of Peshāwar, was incorporated in a Persian satrapy; and the Assakenoi, with the tribes farther north on the Indus, formed a special satrapy, that of the Indians. Both satrapies sent troops for Xerxes' invasion of Greece.

In the spring of 327 B.C. Alexander the Great crossed the Indian Caucasus (Hindu Kush) and advanced to Nicaea, where he was joined by Omphis, king of Taxila, and other chiefs. Thence he dispatched part of his force through the valley of the Kābul river, while ...

advanced into Bājaur and Swāt with his light troops. Craterus was ordered to fortify and repeople Arigaion, probably in Bājaur, which its inhabitants had burnt and deserted. Having defeated the Aspasians, from whom he took 40,000 prisoners and 230,000 oxen, Alexander crossed the Gouraios (Panjkora) and entered the territory of the Assakenoi and laid siege to Massaga, which he took by storm. Ora and Bazira (? Bāzār) soon fell. The people of Bazira fled to the rock Aornos, but Alexander made Embolima (? Amb) his basis, and thence attacked the rock, which was captured after a desperate resistance. Meanwhile, Peukelaotis (in Hashtnagar, 17 miles north-west of Peshāwar) had submitted, and Nicanor, a Macedonian, was appointed satrap of the country west of the Indus. Alexander then crossed that river at Ohind or, according to some writers, lower down near Attock. Nicanor was succeeded as satrap by Philippus, who was, however, assassinated by his Greek mercenaries soon after Alexander left India, and Eudamos and Taxiles were then entrusted with the country west of the Indus. After Alexander's death in 323 B.C. Porus obtained possession of the Lower Indus valley, but was treacherously murdered by Eudamos in 317. Eudamos then left India; and with his departure the Macedonian power collapsed, and Sandrocottus (Chandragupta), the founder of the Mauryan dynasty, made himself master of the province. His grandson Asoka made Buddhism the dominant religion in Gandhāra and in Pakhli, the modern Hazāra, as the rock-inscriptions at Shāhbāzgarhi and Mānsehra show.

After Asoka's death the Mauryan empire fell to pieces, just as in the west the Seleucid power was waning. The Greek princes of Bactria seized the opportunity for declaring their independence, and Demetrius conquered part of Northern India (*c.* 190 B.C.). His absence led to a revolt by Eucratides, who seized on Bactria proper and finally defeated Demetrius in his eastern possessions. Eucratides was, however, murdered (*c.* 156 B.C.), and the country became subject to a number of petty rulers, of whom little is known but the names laboriously gathered from their coins. The Bactrian dynasty was attacked from the west by the Parthians and from the north (about 139 B.C.) by the Sakas, a Central Asian tribe. Local Greek rulers still exercised a feeble and precarious power along the borderland, but the last vestige of Greek dominion was extinguished by the Yueh-chi.

This race of nomads had driven the Sakas before them from the highlands of Central Asia, and were themselves forced southwards by the Hiung-nu. One section, known as the Kushan, took the lead, and its chief Kadphises I seized vast territories extending south to the Kābul valley. His son Kadphises II conquered North-Western India, which he governed through his generals. His immediate successors were the kings Kanishka, Huvishka, and Vasushka or Vāsudeva, of

whom the first reigned over a territory which extended as far east as Benares and as far south as Mālwā, comprising also Bactria and the Kābul valley. Their dates are still a matter of dispute, but it is beyond question that they reigned early in the Christian era. To this period may be ascribed the fine statues and bas-reliefs found in Gandhāra (Peshāwar) and Udyāna (Buner).

Under Huvishka's successor, Vasushka, the dominions of the Kushan kings shrank to the Indus valley and the modern Afghānistān; and their dynasty was supplanted by Ki-to-lo, the chief of a Yueh-chi tribe which had remained in Bactria, but was forced to move to the south of the Hindu Kush by the invasion of the Yuan Yuan. The subjects of Ki-to-lo's successors who ruled in the valley of Peshāwar are known to the Chinese annalists as the Little Yueh-chi. Their rule, however, did not endure, for they were subdued by the Ephthalites (Ye-ta-i-li-to or Ye-tha), who established a vast empire from Chinese Turkistān to Persia, including the Kābul valley. Known to the Byzantines as the White Huns, they waged war against the Sassanid dynasty of Persia. Under Toramāna and Mihirakula they held Northern India, ruling at Sagala, which may be Siālkot in the Punjab. Mihirakula penetrated far into India, but about 528 was defeated by a confederacy of Indian princes under Yasodharman, and was driven back to the Punjab and Indus valley.

There were two distinct streams of Muhammadan invasion towards India. The earlier had resulted in the conquest of Khorāsān; but though Kābul had been assailed as early as 655 and made tributary in 683, it regained its independence before 700, and the stream of invasion was deflected towards Multān and Sind. Ghazni was only taken in 870; and in 902 we find the Kashmīr forces deposing the rebellious ruler of Udabhandapura (Ohind) and giving his kingdom to Toramāna, son of Lalliya, with the title of Komaluka—the Kamalu of Muhammadan historians. In 974 Pirīn, the slave-governor of Ghazni, repulsed a force sent from India to seize that stronghold; and in 977 Sabuktagīn, his successor, became virtually independent and founded the dynasty of the Ghaznivids. In 986 he raided the Indian frontier, and in 988 defeated Jaipāl with his allies at Laghmān, and soon after possessed himself of the country up to the Indus, placing a governor of his own at Peshāwar. Mahmūd, Sabuktagīn's son, having secured the throne of Ghazni, again defeated Jaipāl in his first raid into India (1001), and in a second expedition defeated Anandpāl (1006), both near Peshāwar. He also (1024 and 1025) raided the Afghāns, a name that now appears for the first time as that of a people living in the hills between Ghazni and the Sulaimān range. The present territories of the North-West Frontier Province, excluding Hazāra, thus formed part of the Ghaznivid empire. In

1179 Muhammad of Ghor took Peshāwar, capturing Lahore from Khusrū Malik two years later. After Muhammad was assassinated (1206), his able general, Tāj-ud-dīn Yalduz, established himself at Ghazni, the Kurram valley being his real stronghold, until he was driven into Hindustān by the Khwārizmis (1215). The latter were in turn overwhelmed by the Mongols in 1221, when Jalāl-ud-dīn Khwārizmi, defeated on the Indus by Chingiz Khān, retreated into the Sind-Sāgar Doāb, leaving Peshāwar and other provinces to be ravaged by the Mongols. Yet in 1224 we find Jalāl-ud-dīn able to appoint Saif-ud-dīn Hasan, the Karlugh, in charge of Ghazni. To this territory Saif-ud-dīn added Karmān (Kurram) and Baniān (Bannu), and eventually became independent (1236). In the same year Altamsh set out on an expedition against Baniān, but was compelled by illness to return to Delhi. After his death Saif-ud-dīn attacked Multān, only to be repulsed by the feudatory of Uch, and three years later (1239) the Mongols drove him out of Ghazni and Kurram, but he still held Baniān. In his third attempt to take Multān, he was, however, killed (1249), whereupon his son Nāsir-ud-dīn Muhammad became a feudatory of the Mongols, retaining Baniān. Eleven years later (1260) we find him endeavouring to effect an alliance between his daughter and a son of Ghiyās-ud-dīn Balban, and to reconcile the Mongol sovereign with the court of Delhi. By this time the Karlughs had established themselves in the hills.

In 1398 Tīmūr set out from Samarkand to invade India. After subduing Kator, now Chitrāl, he made his devastating inroad into the Punjab, returning via Bannu in March, 1399. His expedition established a Mongol overlordship in the province, and he is said to have confirmed his Karlugh regent in the possession of Hazāra. The descendants of Tīmūr held the province as a dependency of Kandahār, and Shaikh Alī Beg, governor of Kābul under Shāh Rukh, made his power felt even in the Punjab. But with the decay of the Tīmūrid dynasty their hold on the province relaxed.

Meanwhile the Afghāns were rising to power. Implacably hostile to the Mongols, they now appear as a political factor. At the close of the fourteenth century they were firmly established in their present seats south of Kohāt, and in 1451 Bahlol Lodī's accession to the throne of Delhi gave them a dominant position in Northern India. Somewhat later Bābar's uncle, Mirza Ulugh Beg of Kābul, expelled the Khashi (Khakhai) Afghāns from his kingdom, and compelled them to move eastwards into Peshāwar, Swāt, and Bājaur. After Bābar had seized Kābul he made his first raid into India in 1505, marching down the Khyber, through Kohāt, Bannu, Isa Khel, and the Derajāt, returning by the Sakhi Sarwar pass. About 1518 he invaded Bājaur and Swāt, but was recalled by an attack on Badakhshān.

In 1519 Bābar's aid was invoked by the Gigiānis against the Umr Khel Dilazāks (both Afghān tribes), and his victory at Pānīpat in 1526 gave him control of the province. On his death in 1530 Mirza Kāmrān became a feudatory of Kābul. By his aid the Ghwaria Khel Afghāns overthrew the Dilazāks who were loyal to Humāyūn, and thus obtained control over Peshāwar; but about 1550 Khān Kajū, at the head of a great confederation of Khashi Afghān tribes, defeated the Ghwaria Khel at Shaikh Tapūr. Humāyūn, however, had now overthrown Kāmrān, and in 1552 he entered Peshāwar, which he garrisoned strongly, so that Khān Kajū laid siege to it in vain. Nevertheless the Mughal hold on these territories was weak and often precarious. On Humāyūn's death in 1556 Kābul became the apanage of Mirza Muhammad Hakīm, Akbar's brother; and in 1564 he was driven back on Peshāwar by the ruler of Badakhshān, and had to be reinstated by imperial troops. Driven out of Kābul again two years later, he showed his ingratitude by invading the Punjab; but eventually Akbar forgave him, visited Kābul, and restored his authority. When Mirza Hakīm died (1585), Akbar's Rājput general, Kunwar Mān Singh, occupied Peshāwar and Kābul, where the imperial rule was re-established, Mān Singh becoming governor of the province of Kābul.

In 1586, however, the Mohmands and others revolted under Jalāla the Roshānia heretic, and invested Peshāwar. Mān Singh, turning to attack them, found the Khyber closed and was repulsed, but subsequently joined Akbar's forces. Meanwhile, the Yūsufzai and Mandaur Afghāns had also fallen under the spell of the Roshānia heresy; and about 1587 Zain Khān, Kokaltāsh, was dispatched into Swāt and Bājaur to suppress them. The expedition resulted in the disastrous defeat of the Mughals, Bīrbal, Akbar's favourite, being killed. In 1592 the Afghāns invested Peshāwar, but Zain Khān relieved the fortress and in 1593 overran Tīrāh, Swāt, and Bājaur. The Roshānias, however, were still far from subdued. Tīrāh was their great stronghold, and about 1620 a large Mughal force met with a severe defeat in attempting to enter that country by the Sampagha pass. Six years later Ihdād, the Roshānia leader, was killed; but Jahāngīr's death in 1627 was the signal for a general Afghān revolt, and the Roshānias laid siege to Peshāwar in 1630, but distrusting their Afghān allies retreated to Tīrāh. Mughal authority was thus restored, and Tīrāh was invaded and pacified by the imperial troops in an arduous campaign. Shāh Jahān, however, attempted to govern the Afghāns despotically and caused great discontent. Nevertheless Rājā Jagat Singh held Kohāt and Kurram, and thus kept open the communications with Kābul. In 1660 Tīrāh had to be pacified again; and in 1667 the Yūsufzai and Mandaur Afghāns were strong enough to cross the Indus and were only defeated near Attock. In 1672 Muhammad Amīn

Khān, Sūbahdār of Kābul, attempted to force the Khyber, and lost his whole army, 40,000 men, with baggage and *materiel.* Other disasters followed. At Gandāb in 1673 the Afrīdis defeated a second Mughal army, and in 1674 they defeated a third force at Khāpash and drove it into Bājaur. These reverses brought Aurangzeb in person to Hasan Abdāl, whence he dispatched a force to Kohāt, while a second army forced the Khyber. Aurangzeb appears to have adopted a conciliatory policy towards the Afghāns, some of whom now received fiefs from the emperor. This policy and their internal dissensions kept the country in a state of anarchy, but prevented any concerted Afghān rising against the Mughals.

Nevertheless the Afghāns overran the Pakhli district of Hazāra early in the eighteenth century and the Mughal power rapidly declined, until in 1738 Nādir Shāh defeated Nāzir Shāh, the Mughal governor of Kābul, but allowed him as feudatory to retain that province, which included Peshāwar and Ghazni. Of Nādir Shāh's successors, Ahmād Shāh Durrāni indeed established something more nearly approaching a settled government in the Peshāwar valley than had been known for years, but with the advent of Tīmūr Shāh anarchy returned once more. On the death of Tīmūr Shāh his throne was contested with varying fortunes by his sons, whose dissensions gave ample opportunity to the local chieftains throughout the province of establishing complete independence. Peshāwar ultimately fell to the Bārakzai family; Dera Ismail Khān to the Sadozais.

The Sikh invasions began in 1818, and from that date to the annexation by the British the Sikhs under Ranjīt Singh were steadily making themselves masters of the country. In 1818 Dera Ismail Khān surrendered to a Sikh army, and five years later the Sikhs harried the Marwat plain of Bannu. In 1836 all authority was taken from the Nawābs of Dera Ismail Khān and a Sikh Kardār appointed in their place. But it was not till after the first Sikh War that the fort of Bannu was built and the Bannuchis brought under the direct control of the Lahore Darbār by Herbert Edwardes. In 1834, two years after the great Sikh victory over the Afghāns at Naushahra, the famous general Hari Singh took possession of Peshāwar fort, and at the same time Kohāt and Teri were temporarily occupied by Sikh garrisons. These, however, were speedily withdrawn; and the death of Hari Singh in battle with the Afghāns near Jamrūd in 1837 brought home to Ranjīt Singh, now nearing the close of his career, the difficulty of administering his frontier acquisitions. On his death the Sikh policy was changed. Turbulent and exposed tracts, like Hashtnagar and Mirānzaī, were made over in *jāgīr* to the local chieftains, who enjoyed an almost complete independence, and a vigorous administration was attempted only in the more easily controlled areas. Of the

Sikh governors, the best remembered is General Avitabile, who was in charge of Peshāwar District from 1838 to 1842.

By the proclamation of March 29, 1849, the frontier territory was annexed by the British. For a short time the Districts of Peshāwar, Kohāt, and Hazāra were under the direct control of the Board of Administration at Lahore, but about 1850 they were formed into a regular Division under a Commissioner. Dera Ismail Khān and Bannu, under one Deputy-Commissioner, formed part of the Leiah Division till 1861, when two Deputy-Commissioners were appointed and both Districts were included in the Derajāt Division, an arrangement which was maintained until the formation of the North-West Frontier Province. The internal administration differed in no way from the rest of the Punjab. But to maintain the peace of the border a special force—the Punjab Frontier Force—was raised under the direct orders of the Board. It consisted at first of 5 regiments of cavalry, the corps of Guides, 5 regiments of infantry, 3 light field batteries, 2 garrison batteries, 2 companies of sappers and miners, and the Sind camel corps. Various changes were made in the composition of the force, which at length, in 1886, was removed from the control of the Punjab Government and amalgamated with the regular army.

The attitude of the people during the Mutiny is the highest tribute that can be paid to the success of the internal administration. In the history of the frontier the interest of that period of stress centred at Peshāwar. The Hindustāni regiments at Dera Ismail Khān and Kohāt were disarmed without difficulty, and troops and levies were hurried away to strengthen the garrison of Peshāwar or join the British forces cis-Indus. The situation in Peshāwar was very different. The District contained a large Hindustāni force, which proved mutinous to the core. It was thought possible that the Amīr of Kābul might pour an army through the Khyber. For one crime or another almost every powerful tribe beyond the border was under a blockade. When the news of the outbreak reached Peshāwar, a council of war was at once held and measures adopted to meet the situation. The same night the Guides started on their memorable march to Delhi. On May 21 the 55th Native Infantry rose at Mardān. The majority made good their escape across the Indus, only to perish after fearful privations at the hands of the hill-men of the Hazāra border. On May 22, warned by this example, the authorities of Peshāwar disarmed the 24th, 27th, and 51st Native Infantry, with the result that Pathāns not only of Peshāwar, but also from across the border, came flocking in to join the newly raised levies. The next few months were not without incident, though the crisis was past. When the Mutiny was finally suppressed, it was clear that the frontier Districts had proved to the British Government a source of strength rather than of danger.

A complete list of all expeditions undertaken against the frontier tribes is given in an appendix. During the nine years between annexation and the outbreak of the Mutiny, on no less than seventeen occasions was the dispatch of troops against the tribesmen necessary. But the operations were simply of importance as being measures required for the establishment of a strong rule and a peaceful border, in countries which had never before known law and order.

Of all the frontier tribes, only a few Yūsufzai villages within the British border took advantage of the difficulties of 1857. They were speedily punished, Narinji, the centre of disturbance, being stormed and razed to the ground. In the next year the misbehaviour of the Khudu Khel, roused by emissaries from the Hindustāni fanatics, compelled an invasion of their country, from which the fanatical colony was expelled. In 1859–60 operations were undertaken in the country of the Kābul Wazīrs between Thal and Bannu; and in 1860 the Mahsūd country was overrun, in punishment for a long series of outrages, culminating in an attempt to plunder and burn the border town of Tānk. The tribe, however, did not submit, and after the withdrawal of the troops was put under blockade. Different sections of the tribe, and from 1877 onwards the whole of it, remained under embargo, on account of repeated violations of British territory, almost without intermission, until the next expedition was undertaken in 1881.

In 1863 took place the Ambela campaign. Repeated robberies in British territory had led to a blockade on the Yūsufzai border, and blockade in turn had caused the denunciation of the infidel and the proclamation of *jihād* in all the high places between Swāt and the Hazāra border. Swāt itself was at this time controlled by the famous Akhund, who had had experience of the strength of the Government, and whose inclinations were consequently for peace, especially as a religious rivalry prevailed between him and the head of the fanatical colony. Even in Swāt, however, intense excitement was rife. The object of the expedition was to root out the colony of Hindustāni fanatics which since 1858 had been located in the Barandu valley and was recognized as a permanent source of danger and disturbance. The troops gained the crest of the Ambela pass leading to the Chamla valley, and thence advanced to Mālka, when they encountered unexpected opposition from the Bunerwāls, whose country lies immediately north of Chamla. The Akhund was no longer able to stem the tide, and joined the enemy's camp, followed by standards from all the tribes of Swāt, Dīr, Bājaur, and by contingents from the Utman Khel and the Mohmands, as well as by some British subjects. For more than a month the British force, though raised by successive additions to a strength of more

with the passage of time the coalition of the enemy began to fall asunder, and on the repulse with heavy slaughter of the last of a long series of attacks the object of the expedition was achieved. The Bunerwāls agreed to destroy Mālka and drive out the fanatics, and exclude them from their country for ever. From 1863 to 1893 the fanatics wandered to and fro in the Chagarzai, Hasanzai, and Madda Khel (Yūsufzai) country; and since 1893 they have lived mainly in the Amazai territory in Buner, but they have lost most of their political importance. Other operations in this period do not require detailed mention; but the Black Mountain expedition of 1868, in which the British force numbered nearly 15,000 men (including the reserve), was noteworthy, more perhaps from the audacious provocation given, the strength of the force used, and the difficulty of the country traversed, than from the stubbornness of the enemy or the permanence of the results secured.

An account of the second Afghān War will be found in the article on AFGHĀNISTĀN. Its importance lay chiefly in the imperial issues involved, but it marks an important stage in the relations of the British with the frontier tribes. By the Treaty of Gandamak (May, 1879) the Amīr Yakūb Khān renounced his claim to authority over the Khyber and Mohmand passes, the tribes flanking the main routes into India, the Kurram valley as far as the Shutargardan pass, and the districts of Pishīn and Sibi in Baluchistān.

Between the outbreak of the second Afghān War and the Pathān revolt of 1897 there were sixteen expeditions against the frontier tribes. Of these, eight took place before peace was concluded with Kābul, and were in the nature of punishment inflicted on the clans. The expedition of 1881 against the Mahsūds was more noteworthy, and produced comparative peace on this part of the border for five years. Between 1888 and 1892, the Hazāra border was disturbed almost continuously, and large expeditions were dispatched against the Isazai clans of the Black Mountain, and their neighbours, the cis-Indus Swātis, Alatis, and Parari Saiyids. Little resistance was offered to the troops, and the expeditions were completely successful. The first and second Mirānzai expeditions of 1891 were directed against the Orakzai tribes living along the crest of the Sāmāna. There was little fighting, but the expedition resulted in the occupation of posts along that range; and, except in 1897, there has been no trouble since then on the Orakzai border.

In 1894 the deputation of the Commissioner of the Derajāt to demarcate the border between Wazīristān and Afghān territory, and the invitation extended by the Ahmadzai of Wāna to the Government to occupy their country, led to an attack by the Mahsūds, under the leadership of the Mullā Powinda, on the Commissioner's escort.

the Wāna plain. An expedition followed, which effected the submission of the tribe. Since 1894 Wāna has been occupied, and parts of Southern Wazīristān have been administered by the Political officer in charge. An account of the Chitrāl expedition of 1895 will be found in the article on CHITRĀL.

The summer of 1897 found the border in an inflammable condition. Exaggerated accounts had been circulated of the successes gained by the Turkish armies in their war against Greece, while the growth of a fanatical spirit was fostered by the Mullās, and by the belief that aid would be forthcoming from Kābul. Apart from these reasons for religious excitement, the operations taken to demarcate the new Durand line, referred to below, and the occupation of the Sāmāna range, the Kurram valley, Daur, and Wāna, the passage of British troops through various tracts, and administrative grievances, such as the tax on Kohāt salt, added to the discontent of the tribesmen. The prevalent excitement first sprang into flame in Tochi. An unexpected visit from the Political officer, accompanied by an unusually strong escort, on June 10, to the village of Maizar, the inhabitants of which were already in disgrace for the murder of a Hindu, caused the explosion. After being hospitably entertained, the troops were treacherously attacked. All the British military officers were killed or wounded, but the escort, with the Political officer, withdrew in good order to Datta Khel.

The news spread rapidly and everywhere formed the text of fanatical harangues by Mullās, and in particular by a Bunerwāl of Upper Swāt named Sād-ullah, whose eccentricities had earned him the name of the Mullā Mastān ('mad'). On July 26, followed only by a few boys, one of whom he proclaimed king of Delhi, he started from Landakai, a village about 6 miles above Chakdarra on the south bank of the Swāt river. The tribesmen flocked after him, and by evening, with ever-increasing numbers, the gathering approached the Malakand. A sudden attack was made on the Malakand and Chakdarra simultaneously. The numbers, which at first had barely reached 1,000 men, were rapidly swollen to 12,600 at the Malakand and 8,000 at Chakdarra. Heavy fighting continued at both places, until the Malakand was relieved on August 1 and Chakdarra on the 2nd. The assailants then drew off with a loss of not less than 3,000 men, while the British losses had amounted to 33 killed and 188 wounded. On the relief of Chakdarra the gathering quickly dispersed, and the task of punishment and prevention of further combination was taken in hand at once.

The next to rise were the Mohmands. Animated by the discourses of Najm-ud-dīn, the Adda Mullā, a gathering of about 5,000 armed men from all sections (except the Tarakzai) advanced on August 7 into the Peshāwar valley, and attacked the village of Shankargarh, in which there is a large Hindu element, and the adjoining police post of

Shabkadar. Troops were dispatched from Peshāwar, and the tribesmen were driven back into the hills.

Meanwhile, throughout Afrīdi and Orakzai Tīrāh the excitement had been growing; and frequent rumours reached Peshāwar, Kohāt, and Kurram of the reconciliation of intertribal feuds and the gathering of clans for *jihād*, at the bidding of Mullā Saiyid Akbar, Aka Khel Afrīdi. The trouble began with desultory firing by the Orakzai at the troops on the Sāmāna on August 15. By the 23rd and 24th the whole of the posts in the Khyber, held only by the Khyber Rifles, whose British officers had been withdrawn, fell before a strong combination of Afrīdis. By the end of the month the Orakzai and Afrīdis had collected 15,000 men, all the posts on the Sāmāna were closely invested, Shināwari (a police post at the juncture of Upper and Lower Mīrānzai) had fallen, and Hangu was threatened. The siege of the Sāmāna posts continued till September 14, when Fort Lockhart and Fort Cavagnari (Gulistān) were relieved, the small post of Sāragarhi having fallen on September 12. On the approach of the relief force the enemy withdrew from the Sāmāna ridge into the Khānki valley.

These unprovoked attacks, which had not been without success, involved active military operations as a punishment and a deterrent. The operations began with the dispatch of two brigades (7,000 men) to Datta Khel in the Tochi valley, which caused the submission of the Madda Khel, who agreed to give up seventeen ringleaders, make compensation for the property taken at Maizar, and pay a fine. The final submission was, however, not concluded till 1901, after further operations.

In Swāt a quicker settlement was made. Before the end of the year Upper Swāt, Bājaur, Chamla, and the Utman Khel country had been penetrated by British troops, and the fines imposed had been realized. In January, 1898, an expedition was sent through Buner, fines were realized from the Khudu Khel and Gadūns of the Yūsufzai border, and the Mullā Mastān was expelled by political pressure from Dīr and Swāt. The Malakand Field Force consisted of three brigades, with the usual complement of divisional troops, in all 10,000 men.

The punishment of the Mohmands was effected by two brigades (7,000 men) advancing from Peshāwar, in co-operation with two others detached from the Malakand Field Force. Difficulties were encountered in the advance of the latter, during which the affair at Ināyat Kila took place; but before the end of October the Mohmands had been punished, and the Adda Mullā fled to Afghānistān. On his departure a fine was paid by the tribe and weapons were surrendered.

Tīrāh was invaded from Mīrānzai by the route passing from Shinwāri over the Chagru Kotal, between the cliffs of Dargai and the Sāmāna Sukh. The army consisted of two divisions, under Sir W. Lockhart

supported by columns at Peshāwar and in the Kurram. The advance began on October 18, and on the 21st was fought the severe action of Dargai, in which the British loss was 38 killed and 191 wounded. The troops then penetrated to Maidān and Bārā. By December 20, the Orakzai had completely fulfilled their obligations, but the Afrīdis, who had as yet received little punishment, held out. Their territories were, therefore, still further harried; but the demands of the Government were not complied with till April, 1898, and the posts in the Khyber were held by regular troops till December, 1899, when they were made over to the Khyber Rifles. About 30,000 men were employed in the Tīrāh campaign, which had taken place in a difficult and unknown country, with an enemy who gave the troops no rest and pressed close on the heels of every retirement, while cleverly avoiding resistance in strength to an advance.

Since the conclusion of peace with the Afrīdis in 1898, the border from the Kurram northwards has been undisturbed[1]. In Wazīristān the period has also been marked by increasing tranquillity, but on three occasions troops have been required[1]. On December 1, 1900, the Mahsūds, whose behaviour had been very unsatisfactory, were put under strict blockade. As the tribe continued its depredations, their country was harried during the winter of 1901–2 by constant incursions of lightly equipped columns. In the spring the fines imposed were paid, stolen rifles were surrendered, and security was given for the fulfilment of the other terms demanded. Since this settlement the behaviour of the Mahsūds, as a tribe, has been conspicuously good, though three British officers were murdered by individuals in 1904–5.

In 1901 troops were marched through the Madda Khel country, in North Wazīristān, to enforce complete compliance with the terms imposed in 1897. The operations were successful.

In the autumn of 1902 an incursion was made into the Kābul Khel country from Thal, Idak, and Bannu. There was little fighting except with a band of outlaws at Gumatti, but severe punishment was inflicted on the tribe, with excellent results.

By the terms of the Treaty of Gandamak, the limits of the Afghān sphere of influence were set back along the main lines between India and Kābul to the western ends of the Khyber Pass and the Kurram valley, but north and south of these routes no boundary was fixed. At intervals during their history some measure of control had been exercised over the Pathān tribes from Kābul; and the more important of them, such as the Afrīdis and Mohmands, had been in receipt of allowances from the Amīr for keeping open the passes. But practically they had been independent, and their main object has always been to remain so. In 1893 the Amīr consented to a precise fixing of

[1] Except for the expedition against the Zakka Khel Afrīdis in 1908.

boundaries, and a mission, under Sir Mortimer Durand, proceeded to Kābul to discuss the question. An agreement was signed definitely fixing 'the line which the Government of India and the Amīr have agreed to regard as the frontier of Afghānistān from Chandak (in the valley of the Kunar river, 12 miles north of Asmār) to the Persian border.' Commissions were next issued to demarcate the boundary. The Asmār Commission (1894) demarcated from the Bashgal valley on the borders of Kāfiristān to Nawā Kotal, a point on the confines of Bājaur and the Mohmand country. This delimitation was accepted by both Governments; but south of the Nawā Kotal no demarcation was made, owing to disagreement, the Amīr being unwilling to admit the boundary framed by the Durand agreement in the Mohmand territory. Between the Kābul river and Sikarām (Safed Koh) no demarcation was attempted. But in the same year (1894) boundary stones were set up on the Kurram border, and orders were issued for demarcation from the Kurram to the Gomal river, which led to the Mahsūd expedition already mentioned. In 1895 this demarcation was carried out, after which no further work on the boundary has been undertaken.

From annexation till 1901 the Pathān frontier was under the control of the Punjab Government. Various schemes had been propounded for an alteration of this arrangement, with the double object of securing closer and more immediate control and supervision of the frontier by the Supreme Government, and of making such alterations in the personnel and duties of frontier officials as would tend to the establishment of improved relations between the local British representatives and the independent tribesmen. Of these schemes the most notable was that formulated by Lord Lytton in 1877, which was laid aside on the outbreak of the second Afghān War in the following year. The question was raised again, in consequence of the experiences of 1897; and after mature discussion and deliberation a scheme was formulated by which the Districts of Hazāra, Peshāwar, and Kohāt, together with the trans-Indus portions of Bannu and Dera Ismail Khān, and the Political Agencies in the Khyber, the Kurram, the Tochi, and Wāna were removed from the control of the Punjab Administration. To these areas was added the political charge of Dīr, Swāt, and Chitrāl, the Political Agent of which had never been subordinate to the Punjab. The new Province was constituted in 1901, under a Chief Commissioner and Agent to the Governor-General, with head-quarters at Peshāwar, in direct communication with the Government of India in the Foreign Department. In political questions there is no intermediary between the Chief Commissioner and the local officer—an arrangement designed to secure both prompt disposal of references and the utilization of the expert knowledge of frontier conditions for which the head of the administration is selected.

The northern portion of what is now the North-West Frontier Province corresponds fairly closely with the ancient kingdoms of Udyāna (Swāt) and Gandhāra (Peshāwar), while Kurram has been identified with the Ki Kiangha of Hiuen Tsiang, and Bannu with the country called by him Falana, probably a Chinese transcription of a Sanskrit form Varna or Barna.

Objects of archaeological interest are not uncommon in all these regions, and may be divided into two main categories: those which date from the era before the Muhammadan conquest (1000), and those of more recent origin. The former are generically described as Buddhist or Graeco-Buddhist. Consisting of well-graded roads, rock-inscriptions for the preservation of royal edicts, massive buildings, and sculptures of an almost Hellenic elegance, they form an unmistakable record of the high degree of many-sided civilization to which the people had attained before the advent of Islām. The antiquities of the Muhammadan era, on the other hand, with the exception of a building in Peshāwar city known as the Gorkhatri, which takes its name from a Hindu shrine, consist chiefly of mosques, tombs, and shrines, buildings of an exclusively religious nature, which evince no marked culture in the builders.

Of ancient roads the best known are to be found on the Kohāt, Malakand, and Shāhkot passes, where they are still used for the passage of pack-animals. Ruined structures of a massive type of architecture, some of which have been recognized as forts, others as monasteries and *stūpas*, exist at many places. Of these, the most famous are the ruins on Mount Banj in Gadun territory (identified by Dr. Stein as the famous place of Buddhist pilgrimage, the scene of Buddha's body offering); those at Chārsadda, Naogrām, Jamāl Garhi, Kharaki, Takht-i-Bahai, Sāhri Bahlol, Tiralai in Peshāwar District, Adh-i-Samudh near Kohāt, the Akra mound in Bannu, and Kāfir Kot in Dera Ismail Khān. From the sites in Peshāwar District, and to the north of it, many valuable finds of coins, inscriptions, and sculptures have been made at different times; and from the evidence afforded by these, such knowledge as we have of the ancient kingdoms of Udyāna and Gandhāra and their dynasties is largely derived. Perhaps the most valuable relics of all from this point of view are the famous Kharoshthī rock-inscriptions at Shāhbāzgarhi in Peshāwar District and Mānsehra in Hazāra. These have been deciphered as slightly variant versions of a series of edicts published about 250 B.C. under the orders of king Asoka, the grandson of Chandragupta, or Sandrocottus, the renowned antagonist of Seleucus, Alexander's general. Pre-Muhammadan buildings, still extant in other parts of the Province, such as Adh-i-Samudh and Kāfir Kot, have not been equally distinguished by such finds. They appear to be of more recent construction than the remains in the northern regions, and to have been used more exclusively for defensive purposes.

Among later buildings mention has already been made of the Gorkhatri, once a place of Hindu pilgrimage, to which reference is made in Bābar's Memoirs. The present building was erected as a resthouse for travellers under the orders of Nūr Mahal, queen of the emperor Jahāngīr. The Gorkhatri, once the residence of General Avitabile, who governed Peshāwar in the days of Sikh rule, is now used as a *tahsīl* office. Besides this and the mosque named after Muhabbat Khān, a Mughal governor of Peshāwar, and the country seat of Alī Mardān Khān Durrāni, now in the middle of cantonments and used as the District treasury, neither Peshāwar nor any other District of the Province can boast of any buildings of later date than the eleventh century possessing either architectural pretensions or historical interest.

Population.

The population of the Province as enumerated in 1901 was 2,125,480; but this figure includes merely the population of the five British Districts, the Kurram Agency, and the Shirāni country, only the military posts in the remaining territories having been enumerated. In 1903 a Census was taken in the Tochi valley, which was found to contain a resident population of 24,670. It may be estimated that the whole Province has a population of nearly four millions.

In the administered Districts the density of the population per square mile rose from 148 in 1891 to 152 in 1901. The fertile valley of Peshāwar supports 330 persons per square mile, Dera Ismail Khān being the most sparsely populated District with 74, while the Kurram Agency has only 42.

Of the population enumerated in 1901, 269,905 lived in towns and 1,855,575 in rural areas. The Province contains one city, PESHĀWAR (population, 95,147, including 21,804 in cantonments), its capital, and four towns with more than 10,000 inhabitants: namely, DERA ISMAIL KHĀN (31,737), KOHĀT (30,762), BANNU (14,291), and CHĀRSADDA (20,235). The first three include large cantonments. The Province has 15 smaller towns and 3,348 villages, 1,067 of which contain over 500 inhabitants each. The insecurity of life and property in former days compelled the people to build large villages and fortify them strongly, but there is now a marked tendency to found new homesteads which gradually grow into hamlets. This is especially noticeable in Hazāra and Kohāt. Beyond the administrative border almost every family has its walled homestead, and the villages often consist of a number of towers or hamlets fortified against one another as much as against external enemies.

During the ten years ending 1901 the population in the British Districts rose from 1,857,504 to 2,041,493, an increase of 9·9 per cent. Since 1881 there has been an increase of 30·2 per cent. Precise comparison with the figures of 1868 and 1855 is not possible, but the

increase since the latter year has undoubtedly been very great, especially in Peshāwar. In the decade ending 1901 the increase of the population was almost entirely in the rural areas, the tendency being for the smaller towns to remain stationary or even to decline. Peshāwar city, however, increased from 84,191 to 95,147. The population of the Province is still largely immigrant, though less so than formerly. More than 241,000 immigrants, of whom 76,000 came from Afghānistān, were enumerated in 1901; but against these have to be set off 87,000 emigrants. Neither the immigrants nor the emigrants are more than sojourners who spend the winter months away from their homes, trading, pasturing, or in less reputable employment. After annexation the Districts of the Province were to a large extent colonized by settlers from the tribal territories beyond the border and from Afghānistān. The stream of immigration from these sources is now weakening, the descendants of the first settlers having occupied most of the cultivable area. Thus the population of the Districts is far more stable than it was a generation or two ago.

The age returns of the Province are even more untrustworthy than in other parts of India. At the Census of 1901 the mean age of the population was 23·8 for males and 23 for females. These figures are low according to European standards and below the corresponding figures in the Punjab, but the age return is probably too inaccurate for any conclusions to be drawn. The mean age of Muhammadans is lower than that of Hindus, a fact explained by the larger number of children among the former. The number of children under ten is high, being 3,032 (compared with 2,653 in the Punjab) in every 10,000 of the population.

The registration of births and deaths is defective, perhaps on account of the alleged reluctance of Pathāns to register the birth of a girl. Vital statistics are collected by the police in rural tracts, and by municipal officials in municipalities. The following table shows the principal vital statistics for the Province:—

Year.	Population under registration.	Ratio of registered births per 1,000.	Ratio of registered deaths per 1,000.	Deaths per 1,000 from			
				Cholera.	Small-pox.	Fever.	Bowel complaints.
1881	1,590,637	21·73	19·04	0·01	2·07	13·05	0·56
1891	1,790,401	23·37	26·04	2·19	0·40	19·33	0·29
1901	2,046,109	29·5	19·2	0·06	0·47	14·3	0·19
1904	1,990,744	34·9	28·6	0·00	0·8	22·3	0·3

Malarial fever is rife during the autumn months in all the Districts and in the valleys beyond the border. The virulent type which resembles cholera and is known as 'Peshāwar fever' still occurs in that District,

though it is less prevalent than formerly. Autumnal fever frequently assumes a malignant form in Dera Ismail Khān. Diseases of the lungs, though less fatal than fever, often cause heavy mortality in the winter months. Small-pox is not responsible for many deaths. Stone is common throughout the Province. Goitre affects those who drink water from the hill streams, and guinea-worm those who use tank-water. Eye-affections are peculiarly common in the hot, dry Districts of Bannu and Dera Ismail Khān.

Typhus in epidemic form has visited Peshāwar nine times in the past fifteen years. Cholera is an occasional visitant. Until the spring of 1906 the Province remained free from plague except for a few imported cases. The disease then appeared in a virulent form, but its ravages were confined to a small area of the plains portion of Hazāra District. The trans-Indus Districts and Agencies have so far escaped altogether.

The recorded rates of infant mortality (156 males and 121 females per 1,000 births in 1901) would compare favourably with those in the Punjab if the registration were not defective. Although female infanticide is not suspected, the births reported show a marked excess of males over females, 120 boys being born to 100 girls. This is attributed to the reluctance of Pathāns to report the birth of a girl. Of the total population in 1901, 1,159,306, or 54·5 per cent., were males and 966,174, or 45·5 per cent., females. In other words, there were 834 females to every 1,000 males. In 1891 the ratio was 843.

Among Muhammadans marriage is a civil contract. Among Hindus it is in theory a sacrament and the tie is dissolved only by death, and in the wife's case not even by death; but in the frontier Districts there is much laxity in practice. Women here do not occupy a high position; but custom, which is preferred to Muhammadan law by the courts in all cases where the parties are agriculturists, gives to widows and unmarried daughters in the presence of male heirs a right of maintenance only, and in their absence a life interest. A wife is almost invariably purchased, her price being determined by her looks. Infant marriage is unknown among the Muhammadan tribes on the frontier. Divorce for infidelity is not uncommon; but a Pathān, as a rule, considers it due to his honour to kill both the unfaithful wife and her paramour, though in certain circumstances he will be content with lopping the foot of the latter. Across the border divorcees and widows are not infrequently sold by the husband, or by his heir as the case may be, a Pathān's mother being a realizable asset. There is no prejudice against widow remarriage. The table on the next page gives statistics of civil condition as recorded in 1891 and 1901.

The figures show that social conditions have changed little since 1891. Marriage is less general than in the Punjab, a natural result of the avoidance of early marriage.

Civil condition.	1891.			1901.		
	Persons.	Males.	Females.	Persons.	Males.	Females.
Unmarried .	971,097	587,889	383,208	1,100,608	667,635	432,973
Married .	741,483	373,789	367,694	851,385	432,372	419,013
Widowed .	144,924	45,965	98,959	159,968	51,505	108,463

The dominant language of the Province is Pashtū, which belongs to the Iranian branch of the Aryan family of speech. It has two main dialects: a hard or north-eastern (Pakhto), and a soft or south-western (Pashto). The dividing line of these two dialects runs westwards from Thal through Kohāt District almost to the Indus, but then turns northward, and the speech of the Akhora Khattaks is the soft Pashtū. Thus, Pakhto is spoken in Bājaur, Swāt, and Buner, and by the Yūsufzai, Bangash Orakzai, Afrīdi, and Mohmand Pathāns, while the Khattaks, Wazīrs, Marwats, and various minor tribes in the south speak Pashto. It has been asserted that this division of the language corresponds roughly with the tribal systems of the Pathāns, those who speak the hard or north-eastern Pakhto having a tendency to an oligarchic form of government, while the Pashto-speaking branch is intensely democratic in organization.

The classical dialect is that of the Yūsufzai, in which the earliest Pashtū works were composed. It is the purest and clearest form of the language. The sub-dialects of the Utman Khel tribe, of Bājaur, and of the Afrīdis and Orakzai differ but little from it, though each has its own accent, and there are local differences in vocabulary. The Wazīrs have several *patois*, which are probably less removed from the speech of the original Pathāns than the present standard dialect of Peshāwar, and they have retained many words still found in Punjābi. Round Kānigoram in Wazīristān, Bargista, or Ormurī, an independent Iranian language, is spoken by the Ormurs. The conquered strata of the population on the frontier speak Indian dialects, called Hindkī in the north and Jatkī or the Jat speech in the south, while Gūjarī is spoken by many of the Gūjars, who are numerous in the hills of Hazāra and to the north of Peshāwar. In the Swāt Kohistān, Garhwī and Torwālī are spoken; and the Bashkarīs of the upper portion of the Panjkora Kohistān speak Bashkarī, which is said to be the same as Garhwī. Of these two dialects little is as yet known.

The table on the next page gives the chief figures returned for languages in the territories enumerated in 1891 and 1901.

The population contains several ethnical strata, representing the deposits formed by different streams of immigration or invasion. Most numerous and important are the Pathāns (Pakhtāna), who regard themselves as the dominant class, and form the majority of the agricultural

population in Peshāwar, Kohāt, and Bannu, while beyond the administrative border they are in exclusive possession from Chitrāl to the Gomal. In Hazāra, Gūjars and other tribes of Indian origin predominate, while Dera Ismail Khān is inhabited mainly by Jats.

Language spoken.	Persons.	
	1891.	1901.
Pashtū	1,005,195	1,142,869
Western Punjābi . . .	172,412	581,713
Punjābi	649,449	300,587
Gūjarī	. . .	53,021
Western Hindkī . . .	15,131	16,775

Pathān is not now a racial term, whatever its original significance may have been. It now denotes status, and is said in Swāt and Dīr to describe one who possesses a share in the tribal estate and who has therefore a voice in the village and tribal councils. One who has lost his share is called a *fakīr*, forfeits the name of Pathān, and has no voice in the councils. The Pathān tribes are mainly of Iranian origin, but many of their sections are affiliated clans of Hindkī or indigenous descent, others of Saiyid (Arabian), and a few possibly of Turkish origin. The Pathāns in the settled Districts and Kurram numbered 883,779, or more than two-fifths of the population, in 1901.

Next in numerical importance come the Awāns or vassals with 241,000, mainly in Hazāra and the Peshāwar valley. The Gūjars number 108,000, of whom 92,000 are in Hazāra. They are also numerous in Dīr, Swāt, and Bājaur, where they speak Pashtū, though on the borders of Dīr and Asmār they retain their Indian speech. Other less numerous tribes are the Jats (81,000), mostly in Dera Ismail Khān, Saiyids (77,000), Tanaolis (62,000, immigrants from TANĀWAL), Malliārs (27,000), Dhunds (25,000), Balochs (24,000), Rājputs (20,000), Shaikhs (19,000), Kharrals (16,000), Mughals (14,000), Kureshis (14,000), Bāghbāns (12,000), Parāchas (11,000), Kassābs (7,000), Sureras (7,000), and Gakhars (6,000). Of Hindu castes, the Aroras (69,000), Khattrīs (34,000), and Brāhmans (15,000) are important. In tribal territory, besides the tribes already alluded to, the Torwāl and Garhwī reside in the higher ranges of Swāt and the Bashkarī in the Panjkora hills. In Jandol and Maidān are various other tribes of Kāfir descent converted to Islām, and now reckoned as Pathāns.

Of the artisan classes, the most numerous are the Tarkhāns or carpenters (40,000), some of whom are rising under British rule to the status of a professional class as trained engineers. Next to them in numerical strength are the Julāhās (weavers, 38,000), then come the Lohārs (blacksmiths, 27,000), Mochīs (leather-workers and shoemakers, 23,000), Kumhārs (potters and brick-burners, 20,000), Sonārs (gold-

smiths), and Telis (oil-pressers, 10,000). The Kashmīrīs (wool-weavers and general labourers) number 25,000. Of the menial classes, the Nais (barbers) stand first numerically with 24,000. Next to them come the scavengers, 22,000 in all. Other menial classes are the Dhobis and Chhīmbās (washermen, 17,000), and the Mīrāsīs or Dums (village minstrels, 11,000).

The predominance of Islām may be gauged by the fact that 1,957,777 persons, or 92 per cent. of the population enumerated in 1901, were returned as Muhammadans. In the tribal areas not enumerated its importance is still more marked, though Hindu traders are found even in the wildest tracts and receive ample toleration from their Muhammadan overlords. Tīrāh has a colony of Sikhs. The Muhammadans are mainly Sunnis, less than one per cent. confessing the Shiah tenets, though the Turīs and some of the Bangash tribes in Kurram are avowed Shiahs, as are many of the Orakzai Pathāns in Tīrāh, and the sect is also found in Kohāt and the Shirāni country. The Shiahs are chiefly distinguished by the reverence they pay to Saiyids as descendants of Alī, while among the Sunnis Mullās or priests exercise supreme influence. Fanaticism is violent throughout the Province. As preached by the Mullās, Islām is a religion of gloom, songs and dancing being condemned by them, while a sombre fanaticism, compatible with a degraded morality, is inculcated. Shrines abound and are objects of pilgrimages, fairs being held at each on specified days. The shrines are of saints who have obtained a reputation for miraculous powers or spiritual excellence. They are so numerous that few possess special eminence, but those of the Akhund of Swāt and of the Pīr Bāba in Buner attract pilgrims from all parts of the Muhammadan world. At most shrines bodily ailments may be cured or other advantages obtained.

Of the total population of the Province, only 5,273 (including 533 natives), or 0·25 per cent., were returned as Christians in 1901. The Church Missionary Society has flourishing stations at Peshāwar and Bannu, with outposts at Mardān and Tānk. The medical work of the mission is most beneficial, and people come from great distances to be treated by the mission doctors. The Province lies in the Anglican diocese of Lahore. It is all included in the Roman Catholic prefecture of Kashmīr and Kāfiristān, excepting Dera Ismail Khān District, which lies in the diocese of Lahore.

The majority of the people of the Province are agriculturists. In 1901, 64½ per cent. of the population was returned as dependent on agriculture. This high percentage illustrates the backward condition of industry, only 14·2 per cent. being returned as employed in the preparation and supply of material substances, and 2·3 per cent. in commerce. The artisans are cotton-weavers (39,000), leather-workers

(29,000), blacksmiths and carpenters (26,000), and potters (12,000). Other classes are mainly employed in the large cantonments.

The food of the peasant has improved considerably since annexation. Two meals a day are usual, one at 10 a.m., and the other, the principal meal, at 8 p.m., or earlier in winter. The early breakfast of the Punjab is seldom taken except in Hazāra, and even there consists only of food left from the previous evening. The townsfolk as a rule eat wheaten bread. In summer the well-to-do countryman consumes a mixture of wheat and barley cakes, vegetables, pot-herbs, wild fruit, and milk in various forms. In winter, maize and millet are the staple diet, as they are said to be more warming, but a more obvious reason is the fact that they are harvested in the autumn. In the irrigated tracts the people live better, eating *khichri*, a mixture of rice, pulse, and vegetables, and a kind of hot porridge. The poorer peasants, however, sell their rice and wheat, and use the cheaper millet. All Pathāns eat meat when they can afford it. The Pathān is generally abstemious, and outside the towns the use of opium and spirits is regarded as disreputable. Smoking is universal, despite the efforts of the Mullās to put a stop to it.

The dress of the peasant consists of a turban, a loose shirt or tunic, baggy trousers, tied round the waist by a running string, and two or three shawls or a Swāti blanket wrapped round the waist or placed on the head as a protection against the sun. In Wazīristān the shirts or tunics worn by the men, though indescribably filthy, are often elaborately embroidered round the neck and down the back. Waistcoats are worn not uncommonly. A leathern belt is always worn on a journey by those who have arms to put in it. In parts of the southern Districts among the Jats the trousers are replaced by a loin-cloth, and a sheet is thrown over the shoulders. Women wear an upper garment forming a bodice and skirt in one piece, dark blue in colour with a red border, and a yoke. Underneath are worn baggy trousers, and above is a shawl. Sandals of grass or leather or shoes of the ordinary Punjab type are worn by both sexes. Under Muhammadan rule a Hindu was not allowed to wear a turban, and a skull-cap is still his head-dress. In winter Pathāns wear a *postīn* or sheep-skin coat with the wool inside. In the south the hair is generally allowed to grow long and sometimes to curl into ringlets. In Peshāwar the Pathān shaves his head. The hair of the women is elaborately braided.

A house generally consists of a single room about 25 by 12 feet, built of the material most easily obtainable. In Kohāt and parts of Hazāra rough stone cemented with mud is used, with coarse slate for the roof. Elsewhere the walls are made of mud mixed with straw or of grass wattles. Wooden rafters support the roof, which is of mud and flat. The internal arrangements are very simple. The grain-

safe is the principal piece of furniture; and two or three beds, a low stool or two, some spindles, and baskets for wool and clothes complete the list. Hospitality is a characteristic of the Pathān, and every village has its guesthouse, maintained by the headman or a few of the leading villagers. An unlimited supply of beds, blankets, and food is the mark of a true Pathān headman, and to a great extent his influence depends on his extravagance in entertaining. An ordinary guest receives bread and some condiments, but for an honoured guest a fowl and for a powerful chief a sheep or goat is killed. The guesthouse is also used as a village club where residents and visitors assemble to smoke and talk, and the bachelors of the village sleep there, as Pathān custom does not allow them to sleep at home after reaching man's estate. As elsewhere, the Muhammadans in this Province bury their dead. Hindus burn them, but it is not usual to carry the ashes to the Ganges.

Most Pathāns are fond of field sports, such as hawking, hunting with dogs, and shooting. Frequently they combine with these the more exciting pleasures of highway robbery, cattle-lifting, and burglary. In parts of Kohāt a favourite pastime is to beat the low jungles at night with blazing torches, so that any hares or partridges that may be disturbed are dazzled and secured. In the north fighting rams and quails afford great amusement, and young men play a wrestling game rather like cock-fighting. Farther south tent-pegging is the national game, and on every occasion of rejoicing all who own horses assemble for the sport. In default of a wooden peg an old grass sandal will serve. *Ainda*, a kind of prisoner's base, is played keenly in Bannu, though not perhaps to the same extent as in the adjoining Punjab Districts. Everybody is fond of music, singing, and dancing, and the half-Gregorian style of music affected by the minstrels is not unpleasing. It is claimed for them that they distinguish intervals too subtle for the European ear to appreciate, though they know nothing of harmony, and consider European music mere noise. The recitations of the minstrels are sometimes epic in character, but love-songs and burlesques are favourite subjects also. Some of the latter are witty and do not spare British officials. Often, however, both recitation and gesture are obscene. Muhammadans picnic and feast on the two Id festivals, and Hindus celebrate the Baisākhi in April and the Dasehra in October. In Peshāwar a fair called the *Jhanda mela* is held in the early spring in honour of Sakhi Sarwar, a Hindu saint, who is held in equal honour by Hindus and Muhammadans.

Natives, whether Muhammadan or Hindu, have generally two names, though sometimes one is considered sufficient. In common speech names are contracted; thus Fateh-ud-dīn will be Fattu to his comrades, and Fazl Ilahi will become Fazlu. Where two men

in the village have the same name, the tribal name is often added, and if they also belong to the same tribe their fathers' names are added to distinguish them. A son never receives his father's name. Honorific titles are considered very important. These are of two classes: those conferred or formally recognized by Government, such as Rājā, Wazīr, Sardār, Rai Bahādur, or Rai Sāhib for Hindus, and Rājā, Nawāb, Mirzā, Mīr, Mīān, Khān Sāhib, or Khān Bahādur for Muhammadans; and, secondly, those which have a customary validity in native society, and are therefore used as a matter of courtesy by Europeans in conversation or official communications. These include Pandit, Misra, Bhai, Bāwā, Lāla, and Sodhi (Hindus), and Arbāb, Khān, Kāzi, Maulvi, Munshi, Mirza, and Malik (Muhammadans). Khān, which literally means 'lord,' is adopted as a matter of course by every Pathān, like Mr. in English, and is suggestive of the Pathān attitude to other tribes. Two Muhammadan gentlemen in Hazāra hold the title of Rājā by licence from Government, and the whole tribe of the Gakhars put Rājā before their names. In this Province, as elsewhere, a man's name is an unmistakable indication of his religion; but there are instances of Hindu families who use the distinctively Muhammadan title of Khān, while the reverse process is exemplified in the Gakhars, who are Muhammadans to a man.

In the spiritual hierarchy titles are of even greater importance. Saiyid is a title given only to descendants of the Prophet. Next in order is Mīān, one who is descended from a saint of old time and of more than local or tribal celebrity. Kureshis rank as Mīāns. Next come Akhundzādas or Pīrzādas, descendants of holy men having local or tribal repute. Last come the Sāhibzādas, descendants of Mullās or priests who had acquired a reputation for sanctity. Yet these religious classes need not necessarily occupy themselves with religion, and their profession or character affects their status only to a slight extent in popular esteem.

Agriculture.

The settled Districts of the Province form two main tracts, which differ markedly in their agricultural conditions. The first lies east of the Indus, and consists of the sub-Himālayan District of Hazāra, where the soil, deep and rich in the plain tracts, but shallow and stony in the hills, receives sufficient rainfall. Here a good spring crop is assured in the plains, except on the rare occasions when the winter rains fail; but the autumn harvest is inferior to that of the lower hills, where it forms the chief crop, while the higher altitudes above 5,000 feet hardly produce any harvest in the spring. The other tract, west of the Indus, may be further subdivided into stony uplands and level plains. In both tracts the rainfall, which averages less than 20 inches in the year, is uncertain in amount and uneven in distribution; and both depend largely on irrigation. The

of Bannu District, and that of Dera Ismail Khān; but the soils vary greatly. A light, porous surface soil, more or less intermixed with sand and underlain by strong retentive clay, is found in Peshāwar, while a sandy gravel predominates in Bannu, and sand in the Marwat valleys. In Dera Ismail Khān, the *dāman*, or 'skirt of the hills,' has a clayey soil, and is fringed with a strip of alluvial loam along the Indus. Wherever irrigation is applied, the rich silt deposits tend to make the soil deep and stiff, with a large admixture of clay. Cultivation depends more on facilities for irrigation than on the intrinsic fertility of the soil. The Peshāwar and Bannu valleys are well irrigated and are, therefore, highly cultivated; in Marwat, which depends mainly on the rainfall, the harvests are precarious; and in the *dāman* the crops depend on the embankments, which hold up the surface water, or, in the riverain strip, on wells and floods from the Indus and the fertilizing floods brought down by hill torrents. In the hills the best cultivation is found in the valleys of Kohāt, which generally contain a good clean loam, singularly retentive of moisture, and therefore well able to resist drought. Elsewhere the hill soils are thin and poor, and the harvest is entirely dependent on well-timed rainfall.

There are two harvests: the *kharīf* or autumn, sown from May to August, and reaped between early September and the close of the year; and the *rabi* or spring harvest, sown from October to January and mostly reaped in April or May. Extra spring crops, chiefly tobacco, melons, &c., are cut in June. Sugar and cotton are classed as belonging to the autumn harvest, but are on the ground for nearly a year.

The systems of cultivation vary greatly, as might be expected where conditions are so diverse. In Hazāra the main factor is the elevation, the cold mountain ranges producing little but autumn crops, while in the plains the *rabi* is the chief harvest. In highly irrigated tracts, whether in the plains or in the fertile valleys of Kohāt, the cultivator's main object is to make the most of the water at his disposal, and the best lands are cropped twice a year for years together. Even inferior lands often bear two successive crops, followed by a year's fallow; but in the parts of Dera Ismail Khān watered by embankments, where land is very abundant, the people prefer to leave the land fallow for two years out of three.

Rotations are to some extent followed, the idea being, as in Bannu, to follow such crops as wheat, cotton, tobacco, or turmeric, which are considered exhausting, by clover, maize, barley, or some other recuperative crop the residue of which is ploughed into the soil. When the crop depends on rain, the system pursued is largely determined by the character of the soil, and by the rainfall of each season; some lands are cropped only once every three or four years, others are cropped continuously until exhaustion compels a fallow, and one year the cultivation

will be all for autumn, the next all for spring crops. Cultivation in the Indus riverain is equally variable, as it depends on the floods.

The tillage of the Province is not of a high order. This is due in part to the now obsolescent custom, formerly universal in all Pathān tribes, of a periodical redistribution of holdings. Further, the Pathān is notoriously lazy, and half a century of settled government has not altogether dispelled the demoralization caused by the anarchy that prevailed before annexation. In the lighter soils the seed is often sown at the first ploughing, but other soils are usually tilled from three to six times, according to the crop. The plough, drawn by cattle, resembles that used in other parts of Northern India; but a large heart-shaped iron spade is often used in the heavy clay soils by the Bannuchis and in Daur, either to break up the clods before ploughing or instead of the plough. Seed is usually sown broadcast. Weeding is seldom attempted. Manure is used near villages, its use being limited only by the amount available. In Marwat, Yūsufzai, and the Khattak and Mīrānzai tracts in Kohāt, cultivators often cut the stalk close to the ear, leaving the straw to rot on the ground, while elsewhere it is utilized for fodder. Grain is trodden out by oxen, and winnowing is done by hand with fans. The agricultural implements in use are of an ancient type, but the iron sugar-mill has almost entirely replaced the old wooden press.

In 1901, 1,363,000 persons, or 64·5 per cent. of the population, were returned as supported by agriculture; and of these, 418,000, or 31 per cent., were actual workers. Of the latter, 216,000 were peasant proprietors, including cultivating owners or mortgagees, and 168,000 were cultivating tenants, only 28,000 being non-cultivating owners or tenants. Agricultural labourers numbered only 15,000 actual workers, most of the agricultural work being done by the cultivators themselves (who are often able to assist one another when harvest time falls differently in different places), and by village menials—tanners, sweepers, and the like—who in addition to their proper calling obtain a great portion of their income from harvest wages paid in kind.

Wheat is the chief crop of the spring harvest. It is sown usually in the latter half of October and November, but sowing may begin as early as the middle of September or as late as the middle of January. The harvest is gathered in May and June. Wheat ordinarily covers 1,094 square miles, though in good years, such as 1891, 1898, and 1904, it was sown on more than 1,406 square miles. About one-third of the crop is irrigated. The average yield per acre is on irrigated land from 7½ cwt. to 1½ tons, and on unirrigated land from 3½ cwt. to 5 cwt.

Barley is next in importance. It ordinarily occupies more than 313 square miles, though in good years, such as 1891 and 1898, it

covers double that area, and in a year of scarcity, like 1902, sinks to 156 square miles. Although sown rather later than wheat, it is the first crop to ripen in the spring, and harvesting begins as early as April. About two-fifths of the crop is usually grown on irrigated land. The yield per acre is slightly less than that of wheat.

Gram, which ordinarily covers about 188 square miles, is sown at about the same time as wheat and barley, and reaped as a rule after the latter and before the former. It is grown chiefly in Bannu, which returns nearly two-thirds of the total area covered by this crop. From 4 to 5 cwt. per acre is a good return.

Maize, the chief crop of the autumn harvest, generally covers about 625 square miles, coming next to wheat. It is sown in July or August, or occasionally as early as April, and is harvested from the middle of September to the end of November. More than half the crop is usually grown on irrigated land, Hazāra being the only District in which it is largely produced without irrigation. Peshāwar and Hazāra claim most of the out-turn, and it is practically unknown in Dera Ismail Khān. An acre of irrigated land will give from 10 to 14 cwt. of maize, while unirrigated land seldom produces more than 5 cwt.

The area under spiked millet or *bājra* (*Pennisetum typhoideum*) is ordinarily about 313 square miles, though in bad years, such as 1892 and 1900, it is less than half as much. June and July are the best months for sowing, though it may be sown as early as April, and it is mostly reaped in October and November. Dera Ismail Khān and Kohāt are the chief Districts for *bājra*, which is rarely irrigated. From 3 to 7 cwt. per acre, according as the land is with or without irrigation, is the usual yield of *bājra* and also of *jowār*.

Great millet or *jowār* (*Sorghum vulgare*) occupies usually about 109 square miles. In good years, such as 1891 and 1893, it rose to 156 square miles, while in 1902, a bad year, it fell to 63. It is chiefly grown in Peshāwar, where very little spiked millet is grown. Less than a quarter of the crop is irrigated. The sowing and harvest times are the same as for spiked millet. The crop is often grown for fodder, and is then sown very thickly and known as *chari*.

Rice is but little cultivated, covering only 49 square miles on an average, chiefly in Hazāra, Peshāwar, Kurram, and Tochi. It is confined to irrigated land, and yields 8 to 10 cwt. per acre.

Besides gram many varieties of pulses are grown, usually mixed with other crops. Of these the chief are *māsh* (*Phaseolus radiatus*), *mūng* (*P. Mungo*), and *moth* (*P. aconitifolius*) in autumn, and *masūr* (*Ervum Lens*) in spring. *Māsh* and *mūng* ordinarily cover 31 square miles, though in 1893 they were sown in about twice that area, and the other pulses occupied 109 square miles.

Cotton, mostly produced in Peshāwar and Dera Ismail Khān Districts,

is sown on about 50 square miles, rising in good years, such as 1891 and 1896, to 109, and falling in bad years, such as 1892 and 1902, to 3 square miles. The seeds are used as fodder.

The oil-crops chiefly grown are *til* (*Sesamum indicum*) and rapeseed. They ordinarily cover about 120 square miles; but in good years, such as 1891 and 1893, the area increases to more than double.

As recently estimated, the total production of food-grains in an average year in the Province amounts to about 539,000 tons, and the total consumption, including fodder, grain, and wastage, to 552,000 tons. The excess of consumption over production, however, is partly due to the large number of temporary immigrants and men in Government service.

The total area under fruit orchards is estimated at 4,000 acres, of which 2,700 acres are situated in Peshāwar District. The chief kinds of fruit are grapes, peaches, Orleans plums (*alūcha*), quinces, pears, figs, pomegranates, water-melons, loquats, and dates. Mulberries grow wild almost everywhere. Most of the produce is consumed locally; but dates from Dera Ismail Khān find a market in Multān and other neighbouring Districts, while apricots from Hazāra and grapes from Kohāt are sent as far as Rāwalpindi and sometimes Lahore. The only District which exports fruit in considerable quantities is Peshāwar. The system of fruit cultivation is crude, though an occasional attempt has been made to introduce improved varieties. Pomegranates are the fruit most extensively cultivated, and the Peshāwar pomegranate is now considered to be superior in quality even to that of Jalālābād. The principal varieties of grapes are *bedāna* ('seedless') white and *bedāna* black with round berries, and *husaini* with long oval berries. The annual export of fresh fruits from Peshāwar is estimated in maunds at: pomegranates, 37,500; quinces and pears, 37,500; grapes, 4,500; peaches, 4,500; Orleans plums, 1,500; total, 85,500 maunds (3,130 tons). Pomegranates are sent to the whole of India and as far as Rangoon; quinces are chiefly consumed in the Punjab, while pears go to Rangoon; the export of grapes and peaches is generally limited to Northern India, a small quantity only being sent to Calcutta, as they do not keep longer than about five days; for the same reason, plums are mostly exported to the Punjab, only selected fruit being dispatched to Calcutta. A considerable portion of the fruits imported from across the frontier comes to Peshāwar; this largely consists of dried fruits (almonds, raisins, nuts, and the like), but also includes musk-melons, grapes, and pomegranates. A special fruit van, booked every day from Peshāwar to Howrah during the busy months of September, October, and November, in the height of the pomegranate, quince, and pear season, carries about 5,000 maunds a month.

In but few tracts, outside the Indus valley, are conditions suitable for sinking irrigation wells; but loans are largely taken for the construction and repair of the dams, by means of which the surface water from the hills is utilized for irrigation. Advances for seed and bullocks after the monsoon rains are usually in great demand. Between 1891 and 1900 about Rs. 19,000 was lent annually under the Land Improvement Loans Act, and the advances amounted to Rs. 10,000 in 1900–1 and Rs. 39,611 in 1903–4. The loans bear interest at 6¼ per cent. per annum, the borrower's holding being hypothecated as security. Under the Agriculturists' Loans Act about Rs. 40,000 was advanced annually from 1891 to 1900; Rs. 50,000 was lent in 1900–1 and Rs. 49,347 in 1903–4. These loans are made on the borrower's personal security.

Throughout the Province the amount of agricultural indebtedness is considerable, but in Kohāt the Pathān proprietary bodies are strong enough to prevent their lands from passing to outsiders. In the other Districts there is some danger that the agricultural tribes may be expropriated, and the Punjab Land Alienation Act has been extended to them (excluding Peshāwar) in a modified form. Creditors are nearly always Hindus of the trading classes, and the rate of interest on loans may be anything from 12 per cent. upwards.

The Province possesses no noteworthy breed of cattle, except the Peshāwar buffalo, which is used for burden and will carry to market as much as 10 to 15 maunds of agricultural produce. The other local breeds are small and weak, but as there is not much well-irrigation strong cattle are not required. When needed, they are generally imported from the Punjab.

Sheep and goats are bred in every District, but large numbers are also brought from across the border for the winter grazing. The two chief breeds of sheep are the ordinary thin-tailed variety of the Punjab, and the *dumba* or fat-tailed. Sheep and goats are kept for their wool and hair and the profits from the sale of the young, and there is a large market for mutton in the cantonments.

Camels are largely used for transport, but are not bred except in Kohāt District.

No District has any special reputation for its horses, though horse-breeding is encouraged by the supply of stallions kept by the Imperial Remount department in Hazāra and by the District boards in the remaining Districts. The best animals are imported from beyond the border. Donkeys are much used for local transport; and the Remount department keeps donkey stallions for mule-breeding in Hazāra, where the nature of the country renders the use of mule transport indispensable.

Of the total cultivated area, 72 per cent. is dependent on the rainfall,

25 per cent. is irrigated by canals, 2 per cent. is irrigated by perennial streams or inundated by river floods, and less than one per cent. is irrigated from wells. The present canal systems utilize the waters of the Kābul, Swāt, and Bārā rivers in Peshāwar District, of the Kurram in the Kurram Agency and Bannu, of the Tochi in Daur and Bannu, and of the minor affluents of the Indus in the remaining Districts. The Indus itself has not as yet afforded any great supply for irrigation; but a scheme for an inundation canal on its western bank at Paharpur in Dera Ismail Khān District, which would command nearly 94 square miles, is under preparation.

Work will also shortly begin on a bolder project, that of bringing a canal from the Swāt river by a tunnel under the Malakand Pass into the eastern portion of Peshāwar District. When completed this will supply, besides the independent villages of Sam Rānizai, from which a water rate will be levied, an area of nearly 300 square miles in the north-eastern portion of the District, for which the existing Swāt River Canal does not suffice.

The demand for irrigation is greatest in the arid plains of Dera Ismail Khān and Bannu. In the former District there is considerable irrigation from the creeks of the Indus, and from hill torrents and perennial streams, but no large canal has been made. Bannu is in parts very highly irrigated, 30 per cent. of the cultivation in that District being protected by canals. In the Daur tract of Northern Wazīristān the whole of the cultivated area is irrigated. Nearly all the cultivation in the Kurram valley is watered from the Kurram river and the snow-fed streams which descend from the eastern slopes of the Safed Koh. In Kohāt the Kohāt Toi and perennial streams irrigate considerable areas, but the broken character of the District forbids any large schemes. Hazāra possesses an ample rainfall, and its hill tracts are to a great extent independent of canals; but its plains and open valleys receive an abundant and fertilizing irrigation from the perennial streams, the Kunhār, Siran, Dor, and Harroh. The District in which irrigation has been most fully utilized is Peshāwar. Wells are confined to the Swābi *tahsīl* of Peshāwar, the Indus riverain in Dera Ismail Khān, and parts of Kohāt. The physical conditions of the Province preclude any great extension of well irrigation.

Before annexation canals had been dug in Peshāwar, Bannu, Daur, and elsewhere. In Peshāwar several small canals were constructed under Mughal or Durrāni rule. Most of these are still in working order, and they are included among the scheduled canals which are managed by the Deputy-Commissioner. The total area irrigated from this source is about 203 square miles, paying a net assessment of nearly 6 lakhs. The Swāt River Canal, which irrigates about 250 square miles in the table-land east of the Swāt and Kābul rivers,

was completed in 1885. The KĀBUL RIVER CANAL, which irrigates 78 square miles in the Peshāwar and Naushahra *tahsīls*, was completed in 1893. Both the Swāt and Kābul Canals are the property of the Government. The Bārā is a scheduled canal, but its weir and upper distributaries were constructed and are managed by the Irrigation department. Besides these canals, the Michni, Dilāzāk, and Shabkadar branch were constructed by the District board of Peshāwar in 1896.

The numerous canals in the Districts south of Peshāwar are all private, none being owned by the Government, though they are to a certain extent controlled by the Deputy-Commissioners on behalf of the people, with the aid of a small establishment paid from a cess levied in the area irrigated. All these canals are perennial.

Those canals which are under departmental control are classed as 'major' works. The total outlay on them up to 1903-4 was 56 lakhs, and the average receipts have been 11 per cent. on the capital outlay. Other canals are classed as 'minor' works. The total expenditure on these has been 5 lakhs, and the return 11 per cent. on the sum expended.

No canal revenue, beyond a small cess to cover the expenses of management, is levied on the private canals, but the lands irrigated by them are assessed to land revenue at irrigated rates. Water rates are paid on the canals owned by the Government or the Peshāwar District board, the rate usually varying according to the crop grown.

Rights in water are as valuable as rights in land, though the two rights are now sometimes distinct when the supply of the water is very abundant. The distribution of the available water-supply is governed by ancient customs, often of great intricacy when the supply is scanty. Its ultimate distribution among individual co-sharers is usually determined by lot.

Rents, wages, and prices.

Under native rule the State took all, or nearly all, the produce of the land which was not required for the subsistence of the cultivators, in tracts where such exactions were possible, such as the Peshāwar valley and the Haripur plain in Hazāra. In outlying areas, such as the northern glens of Hazāra, the remote valleys of Kohāt, and the Bannu Marwat plain, the revenue could, however, be collected only by an annual military expedition; and, as this was not always feasible, the practice arose of farming out large tracts to the local chiefs for a cash revenue, the amount of which usually depended on the chief's strength and the expediency of conciliating him. The chief similarly took all he could from the actual cultivators. In these circumstances there was no room for a landlord intermediate between the cultivator and the state or local chief; and it is only since the value of land has risen under the milder

British assessments that anything in the shape of a margin leviable as rent has been in any general way available for the owners of land.

The assessment on rent-paying lands, which, under native rulers was usually taken direct from the cultivator in kind, is now always collected from the owner in cash, and the latter recovers from the tenant, in kind or in cash, an amount which ordinarily runs to at least three times the value of the assessment. The usual practice is to take rent in kind at a share of the produce, and produce rents are paid in 57 per cent. of the rented area of the Province; but where the crops grown are difficult to divide, and in the neighbourhood of towns, or on land held by occupancy tenants, it is not unusual to find rents paid in cash. The exact rate at which a rent in kind is paid is largely a matter of custom; and such rents, while varying considerably from soil to soil, do not change much from time to time. Cash rents, on the other hand, have necessarily increased with the rise in the prices of agricultural produce, and the average incidence of such rents was Rs. 3-4-7 per acre in 1901-2.

As more than 48 per cent. of the land is cultivated by the owners themselves, and a fair portion of the rest by owners who pay rent only to co-sharers, the tenant class in the North-West Frontier Province, as in the Punjab, is neither so large nor so distinctively marked as in other parts of Northern India, and the law affords much less elaborate protection to the tenant than is usual in the United Provinces or Bengal. A limited number of the tenant class, amounting to 22·5 per cent. of the whole, has been marked off by the legislature on certain historical grounds as entitled to rights of occupancy; and the rents of this class, if paid in cash, cannot be enhanced to a rate exceeding the land revenue by more than 12½ to 75 per cent. (according to circumstances). In the case of the remaining tenants who hold at will, no limit is fixed to the discretion of the landlord in the matter of enhancement; but the procedure to be followed in ejectment, and the grant of compensation for improvements legally executed, is provided for by the law in respect of both classes of tenants. Rent in kind is usually one-half the produce or more on irrigated and one-third or less on unirrigated land, the tendency being for rents to rise on the former.

With normal prices, the sum required for the food of a labouring family may be taken at about Rs. 4½ a month, and to this Rs. 1¼ a month must be added for a reasonable amount of furniture, clothing, and other necessaries. The ordinary unskilled labourer, therefore, requires about Rs. 6 a month, or its value; and this may be taken as the ordinary wage now prevailing. The labourer in a town is usually paid entirely in cash; in the country he is paid either wholly or partially in kind. The agricultural labourer consumes a little more food than the town labourer; but whereas the latter has house-rent to

pay, the former is generally housed by his employer. The cultivator who rents but does not own land lives at a standard of comfort very little higher than the landless labourer. As his expenditure, like his income, is almost entirely in grain, and a large part of his food and clothing is produced by himself or his family, it is difficult to estimate his receipts in money; but it would probably be correct to say that, when the ordinary day labourer of the Province receives Rs. 6 a month, the income of the cultivator after paying his rent would be represented by something like Rs. 7 or Rs. 8, while if the cultivator were also an owner of land, his average income, after payment of Government dues, might be put at Rs. 10, or more. Skilled labourers, such as blacksmiths or masons, get about Rs. 16 a month or its equivalent, and carpenters still more. A clerk receiving between Rs. 20 and Rs. 30 has to maintain a better style of dress and living than men with the same income who work with their hands. Wages are now twice or thrice as high as they were under Sikh rule, and there has been a progressive rise in recent years. So far as the labourer's food is concerned, its money value has increased 30 to 35 per cent. since 1880, while the other items of his expenditure have decreased in price; and it would probably be correct to say that during the same period the labourers' wages have risen some 20 to 25 per cent. With artisans the increase has been larger, or from 25 to 30 per cent. During the decade ending 1901 the extension of railways, roads, and cantonments greatly increased the demand for skilled, and to a less extent for unskilled, labour. Wages in consequence have risen more than the cost of living. At harvest time labour from the Punjab and independent territory is required.

No official statistics are maintained regarding the prices of any but agricultural staples. The rise of prices is best studied in the retail figures, which are available in greater completeness than the others. The following table shows rates, in seers per rupee, at the principal centres:—

	Percentage of area under crops in 1903-4.	Peshāwar.				Dera Ismail Khān.			
		Average for ten years ending			1903.	Average for ten years ending			1903.
		1880.	1890.	1900.		1880.	1890.	1900.	
Wheat .	38.4	19.13	18.69	16.69	15.16	24.87	18.69	17.75	15.35
Gram .	6.7	20.06	21.13	18.00	19.11	27.81	25.25	21.43	19.84
Jowār .	3.0	27.37	28.06	21.43	21.69	36.81	27.62	22.18	26.87
Bājra .	8.3	23.69	22.06	16.25	16.47	24.87	24.56	18.50	20.89
Kohāti salt	...	...	...	29.62	17.36	...	...	24.62	15.67

From these it will be seen that the rise in the price of agricultural produce has been steady and almost universal, varying from nearly

40 per cent. in the price of wheat, the most important crop, during the last twenty-three years at Dera Ismail Khān, to less than 5 per cent. in the case of gram at Peshāwar during the same period. The price of land has steadily risen meanwhile; and there is no reason why the agricultural population, among whom the standard of comfort has enormously improved, especially in Peshāwar, should not have their full share in the prosperity of the country, but for their inveterate propensity to improvidence and extravagance, to say nothing of litigation and crime, which has caused so much land in Peshāwar to pass into the hands of the money-lending mortgagee.

Forests.

The operations of the Forest department are confined to the 'reserved' forests in Hazāra, which have an area of 235 square miles, and that District forms the only Forest division in the Province. It is in charge of a Deputy-Conservator, under the control of the Revenue Commissioner; but the Conservator of Forests, Punjab, exercises a general professional superintendence over the management of the forests. The financial results of the department are shown below:—

	1880-1 to 1889-90 (average).	1890-1 to 1899-1900 (average).	1900-1.	1903-4.
	Rs.	Rs.	Rs.	Rs.
Revenue . . .	78,000	87,000	89,000	83,000
Expenditure . .	60,000	62,000	53,000	52,000
Surplus . . .	18,000	25,000	36,000	31,000

The revenue is principally derived from sales of *deodār*. The village forests of Hazāra are also important, and the Deputy-Commissioner is entrusted with their administration. Hazāra likewise contains military reserves, 8 square miles in area. In Kohāt 74 square miles of unclassed forest and Government waste are controlled by the Deputy-Commissioner, and there is a small forest area in Peshāwar in which the people have rights jointly with Government. The other two Districts contain a few scattered *rakhs*, but these consist chiefly of scrub and form grazing grounds rather than forests. The chief trees in the Hazāra forests are *deodār*, *Pinus excelsa*, blue pine, Scotch fir, wild cherry, ilex, sycamore, horse-chestnut, walnut, and yew; while in the other Districts the *shīsham* (*Dalbergia Sissoo*), mulberry, willow, *Melia sempervirens*, *Acacia modesta*, tamarisk, olive, and poplar are most common. The dwarf-palm grows largely in the lower hills, and is much used for making mats and other articles. Beyond the administrative border the Wazīristān hills contain some fine forests, as do the upper slopes of the Safed Koh in Kurram, and the highest ranges in Chitrāl. All these forests, however, are as yet almost unexplored.

The only mineral product of commercial importance in the Province is rock-salt, which is obtained from the Jatta, Mālgīn, Bahādur Khel, and Karak quarries in Kohāt District. The average output during the six years ending 1903 was 2,640 tons. Saltpetre is manufactured in most Districts from the nitrous earth found on village sites. In 1903–4 there were three refineries in the Province, which produced about 150 tons of refined saltpetre and 25 cwt. of impure salt (*sitta*).

Mines and minerals.

Associated with the Kohāt salt are layers of gypsum and alum shale, but they are at present of no commercial importance. Marble is worked in Peshāwar District near Naushahra and opposite Attock. Limestone and sandstone are abundant, and are used locally for building. There are petroleum springs at Panoba in Kohāt, and in one or two other places in the Province, but the amount of oil yielded is insignificant. Under Sikh rule, sulphur was worked near Nakband in Kohāt District, but the pits are now closed. It is also found with gypsum in the Sulaimān range. Gold occurs in minute quantities in the sands of the Indus and Kābul rivers. Traces of lignite have been observed in Hazāra and in the Sheikh Budīn range, and probably exist in other parts of the Province. The lignite in Hazāra is regularly worked and made into briquettes for local use, but the out-turn does not exceed 1,055 cwt. annually. Coal of a fairly good description has also been recently found, in considerable quantities, along the eastern border of Bannu and Kohāt Districts in the Maidān range which separates them from the Punjab District of Miānwāli. Iron is found in the Yūsufzai hills, where there are signs of old workings, and workings still exist in Wazīristān. Red hematite ore is also found at Bakot in Hazāra District. From Bājaur fused or hammered iron of good quality is imported into Peshāwar. The metal is said to be abundant at Baroul in Dīr, but is no longer worked. Antimony has been found with iron at Bakot, and a very good ore is also imported from Bājaur. The Mehtar of Chitrāl has derived a considerable income in recent years from the sale of orpiment, but the mine now shows signs of exhaustion.

Coarse cotton fabrics are woven by hand in every part of the Province, but there is no export, as the amount made is insufficient for home consumption. Beautiful longcloths or *khes* are made in Dera Ismail Khān, Kohāt, and Peshāwar. Finer fabrics are generally woven for *lungīs* (turbans), mostly in grey or dark blue, with richly worked end-pieces in bands of gold thread (*tila*) or coloured silk; and in Hazāra fine stripes and checks are produced.

Arts and manufactures.

A very interesting production of Peshāwar is a cotton fabric decorated with a substance called *roghan*, a preparation of oil

obtained from the wild safflower (*Carthamus oxyacantha*), by the Afrīdis, whence the material is generally known as 'Afrīdi waxcloth.' The *roghan* is applied in a plastic condition to the fabric by means of an iron style on the lines of the required pattern. It is then pressed into the cloth with the moistened tip of the finger, when it sets and firmly adheres to the texture. Various colours are used, and the composition is often dusted over before drying with powdered mica, thus giving the pattern a silvery gloss.

Peshāwar and Dera Ismail Khān produce wool of fair quality, but the only woollen goods woven are blankets, the best of which are made in Swāt for export. Woollen camel-bags are also woven. Felted *namdās* are used as coverings for animals, for keeping ice, and for saddle-pads, the better qualities having coloured designs inserted. Hazāra and Kohāt export *namdās* on a large scale, the largest serving as carpets. Among the Wazīrs on the Bannu border a kind of woollen *darī* is made, with a bold design and some artistic merit. The Marwats of Bannu District also make woollen-pile rugs, locally known as *nakhais*.

Silk-spinning and weaving are fairly important industries at Kohāt and Peshāwar, where silk turbans (*lungīs*) are woven, and a few other silk fabrics are made in the latter city. At both places, turbans are more commonly made of fine cotton, ornamented with stripes and bars of silk and gold thread. The Kohāt *lungī* is richly ornamented with coloured silk bars and stripes at the ends, something like the familiar Algerian stripes. The pattern is known as the Bangash *lungī*, and, like the check of a Scottish tartan, is distinctive of a particular *khel* or clan.

The stitch peculiar to frontier embroideries is that known as herring-bone, and is the most characteristic feature of the indigenous embroideries of India. In every District wraps, known as *phūlkāris*, are embroidered with silk, those of Hazāra being of special excellence. White drawn embroidery (*chikan doz*) is made in Peshāwar, and some of the patterns worked on fine muslin are of exquisite fineness and beauty. It is chiefly applied to the veils (*burkas*) worn by Muhammadan ladies, and to quilts or *soznis*.

The ornaments worn on the frontier are few and simple, and differ little from those in other parts of Northern India. At Peshāwar massive necklets of characteristic patterns, and bangles forming a single curved roll with open-work perforations, are made. In Hazāra silver is wrought into necklaces and other articles, plates are cut out in the form of a cartouche, made convex and roughly embossed and engraved, the ground being filled in with imitation enamel in green and red. Personal ornaments are sometimes crudely enamelled in blue and yellow, while occasionally the pattern is emphasized by being roughly gilt.

Before the introduction of British rule, swords and matchlocks were made in almost every part of the frontier, and Peshāwar still produces sword-blades and knives, while the manufacture of firearms, once an important industry, now flourishes in the Kohāt Pass.

Copper-ware, tinned for Muhammadan domestic use, is one of the specialities of Peshāwar. It is all hammered work, the patterns being engraved and often loaded with lac. Trays, dishes, ewers with basins, and wine-bowls are the usual objects; and the workmen, unlike those of Kashmīr who work in the same style, have not attempted adaptations to European uses. The Persian character and feeling of the ornament is much more striking than in Kashmīr work, the chasing is simpler and bolder, and the forms are often identical with Persian originals, which in their turn were copied from Tātār vessels. Very little brass-ware is made, its use being mainly confined to Hindus, who are not numerous in the Province.

At Peshāwar glazed earthenware or faience is manufactured for native use. The reddish earth body or paste is coated with a dressing of white earth, forming the slip or engobe. It is then dipped into a glaze, of which the basis is lead oxide. Rude patterns in manganese are outlined on the unburnt glaze, and filled in with oxide of copper, the result being green leaves, outlined in brown, on a dirty greenish white. Besides glazed ware, earthen vessels decorated with fleeting water-coloured painting or in coarsely pencilled parti-coloured patterns, and glass phials and bottles are made at Peshāwar. Hazāra and Bannu produce a very good quality of unglazed earthenware.

Boats are built in some numbers in Peshāwar District; and the carpentry of the city is above the average, a speciality being *pinjra*, a kind of lattice-work, in walnut and other woods, in which the tracery consists of small laths, arranged in geometrical patterns with their edges displayed. The charm of this work lies in the fact that each small piece is fitted to the other by means of a minute joint, no glue being used. The lac turnery, carried on at Dera Ismail Khān, is of considerable artistic merit, and is applied to larger articles than is usual in this class of work, the small round tables being well-known. The general tone of colour is subdued and almost sombre, red, black, and dark green, relieved by a little grey, being the principal colours, with ornaments in amalgam, which have the effect of dull silvery lines. The pattern is always inscribed with a style, and in certain parts the lines are filled with amalgam. Ivory and camel-bone ornaments in the shape of knobs, studs, and flowers are liberally employed. The lac-ware of Bannu is bolder in design, and of some merit, though in technique it is inferior to that of Dera Ismail Khān. The *chārpais* or beds of the Wazīrs are so contrived that they can be used as chairs in the daytime.

The tanners of the frontier make richly embroidered leathern belts,

with powder flasks, bullet cases, flint and steel pouches, and other accoutrements attached. They also make sheep-skin coats or *postīns* (inferior to those imported), water-bottles, mule trunks, and a certain amount of saddlery. The shoes have a great reputation, and articles in embossed leather are produced at the same place.

Organized industries are still in their infancy; and the only factories are one at Peshāwar for ginning and cleaning cotton, and ice factories at Bannu and Kohāt.

Commerce and trade.

The North-West Frontier Province, with a territory for the most part sparsely inhabited, and without manufactures or a large surplus of agricultural products, owes its commercial importance to the fact that it lies across the great trade-routes which connect trans-border tribal territories and the marts of Afghānistān and Central Asia with India. These routes are determined mainly by geographical and, to some extent, by political conditions. The imports from Buner and Bājaur come through Naushahra. Most of this traffic still comes over the Malakand Pass, but the pacification of the country is leading to a more general use of the shorter routes, via the Shāhkot and Murād passes and the Totai road. Commerce with Tīrāh passes through Peshāwar and Kohāt. The trade of Afghānistān comes down wholly through those two Districts and the Tochi and Gomal valleys. The bulk of it is carried on with Peshāwar by the Khyber Pass, which is open for traffic two days a week under the protection of the Khyber Rifles. Some of the trade also crosses the Peiwar Kotal into the Kurram valley and thence down to Kohāt. Next in importance is the Gomal route, which has been steadily increasing in popularity since the pacification which followed the Mahsūd blockade of 1901–2. The Chuhar Khel Dhāna and Vihowa Kharr routes, once important, are being abandoned by the nomad tribes of Afghānistān for the more developed route by rail through Baluchistān, and now only supply local needs in the country east of Kalāt-i-Ghilzai and Ghazni. The trade is borne on camels which travel in caravans; and the owners, the Powindas, or nomad merchants, generally pass through the Province, without breaking bulk, to Lahore, Amritsar, and Multān, or, if they can afford the journey, to Calcutta and Bombay. Peshāwar city carries on a considerable trade with Afghānistān, but is too remote from the lower Provinces of India to form an *entrepôt* for the Central Asian trade, and an attempt made in 1869 to establish a fair there failed. The trade with Bokhāra, once important and lucrative, has steadily declined under the double system of transit and customs dues levied by the Amīr of Afghānistān and the Russians, who have included Bokhāra in their customs system. Such of the trade as still survives is being diverted to the Batoum-Bombay sea route.

The trade which is carried along these routes is registered at convenient places near the entrances to the passes traversed by the caravans.

From Buner are imported sheep, goats, grain, pulses, hides and skins, and *ghī*. From Bājaur come similar products, with cordage and mats, oils, timber, and wool. From Tīrāh are imported cordage, ropes, raw fibre, fruit, vegetables and nuts, hides and skins, leather, mats, and timber. The imports from Kābul are chiefly sheep and goats, fruits, nuts and vegetables, wheat, asafoetida and other drugs, hides and skins, mats, *ghī*, timber, silk, and wool. The trade has greatly increased since 1901, when the severe restrictions imposed on it by the late Amīr, Abdur Rahmān, were partially removed.

The chief exports across the border are cotton piece-goods, twist and yarn, salt, sugar, tea, tobacco, hardware, metals, leather, dyeing materials, silver, and coin.

Statistics of the trans-border trade are given in Table VIIA on p. 215. It will be observed that in 1903–4 the value of exports exceeded that of imports by Rs. 44,12,000, and that the excess of treasure exported amounted to Rs. 2,64,000.

The value in 1903–4 of the trade carried on with the principal territories, as far as this is registered, is shown below, in thousands of rupees. The trade with Kābul includes that with Central Asia; and that with Bājaur includes the large and increasing commerce with Swāt, Chitrāl, and the countries east of the Hindu Kush.

	Afghānistān.	Tīrāh.	Bājaur.	Buner.
Imports from . . .	29,84	3,96	33,18	1,97
Exports to	51,48	4,72	55,91	3,61

Table VII on p. 214 shows the rail-borne trade with other Provinces and States in India, and that with Kashmīr, which is entirely by road through Hazāra District. Cotton piece-goods, metals, tea, and woollen goods are the principal imports; hides, skins, apparel (chiefly furs), and tobacco are the principal exports. The general conditions of the trade with Kashmīr resemble those of the trans-border trade, in that there is a considerable excess of exports. *Ghī* is the chief import and piece-goods are the main export. Statistics of the goods carried down the Indus are not available.

Communications.

The Province is traversed by the North-Western Railway system of the Punjab, which gives communication at three points. The Attock bridge conducts the main line over the Indus to Peshāwar, 1,520 miles from Calcutta; and a broad-gauge extension, 12 miles in length, runs to Fort Jamrūd at the mouth of the Khyber Pass. From Naushahra cantonment a

narrow-gauge branch runs via Mardān to Dargai at the foot of the Malakand Pass. The second point of connexion is at Khushālgarh, also on the Indus, 53 miles south of Attock. Here the river is crossed by a bridge of boats, which forms a link between the Māri-Attock branch of the North-Western Railway and the narrow-gauge line to Kohāt and Thal; but a railway bridge is now being built across the Indus, and on its completion the Khushālgarh-Kohāt-Thal line will be converted to the broad-gauge. Farther south there is no railway in the Province, but Dera Ismail Khān is connected with Daryā Khān on the Sind-Sāgar branch of the North-Western Railway by a bridge of boats during the cold season. The only line open in 1891 was that from the Attock bridge to Peshāwar, 44 miles in length. In 1904 the total length of railways open was 188 miles.

The railway system is supplemented by several important roads. The grand trunk road runs beside the railway from Attock to Peshāwar, and thence through the Khyber to Landi Kotal. A metalled road, 234 miles long, passes from Peshāwar, through Kohāt and Bannu, to Dera Ismail Khān, traversing the whole length of the Province. A similar road connects Khushālgarh with Kohāt and Thal, a distance of 96 miles. From Thal a partially metalled road runs up the Kurram valley to Pārachinār (57 miles), whence a trade route leads over the Peiwar and Shutargardan passes to Kābul. The roads from Bannu to Datta Khel up the Tochi valley (64 miles), and from Dera Ismail Khān to Murtazā via Tānk (60 miles), are also metalled. The latter is being extended to Wāna (57 miles), which lies a little north of the Gomal. The cis-Indus District of Hazāra is entered by a road (metalled) from Hassan Abdāl on the North-Western Railway in the Attock District of the Punjab to Abbottābād (44 miles), whence it runs through Garh Habībullah to Domel in Kashmīr.

All the metalled roads thus lie in the settled Districts, or in the administered parts of trans-border territories, and are entirely a creation of British rule. In 1890–1 the total length was only 294 miles, but in 1900–1 it had risen to 448 and in 1904 to 524 miles. Apart from these, and excluding the metalled roads within cantonment and municipal limits, the Province possessed, in 1900–1, 4,208 miles of unmetalled roads; but these are often mere camel tracks, with bridges of boats over the deeper streams in the hot season. Roads are maintained from Imperial revenues, and from municipal, cantonment, and District funds.

Mail tongas ply between Hassan Abdāl and Abbottābād; Peshāwar and Kohāt; Thal and Pārachinār; Kohāt and Bannu, and thence to both Datta Khel and to Dera Ismail Khān; and from the last place to Tānk and Murtazā. Cherāt and Sheikh Budīn also enjoy a tonga service in summer time. Bullock-carts, *ekkas*, and light two-wheeled

traps are used on the metalled and on some of the better unmetalled roads; but the great mass of the traffic is carried on pack-animals, camels being mainly employed, though buffaloes and donkeys are also used.

The navigable rivers of the Province are the Indus, Swāt, and Kābul. The bulk of the traffic is on the Indus, on which there is a regular trade down-stream to Multān and Sind, the boats being generally broken up or sold at the end of their voyage to save the expense of towing them up-stream. As has been said, the Indus is crossed by the Attock bridge, and at Khushālgarh and Dera Ismail Khān by bridges of boats. At the latter place a steam ferry replaces the bridge in the hot season. Passengers have often to wade up to their necks through subsidiary channels to reach the steamer, which only plies across the main channel. Elsewhere the ordinary country ferry-boat is used, or the rivers are crossed by means of inflated skins, the possession of which without a licence is prohibited by law, owing to the facilities they afford to criminals.

The territories under the administration of the Chief Commissioner of the North-West Frontier Province form a part of the postal circle in charge of the Postmaster-General, Punjab and North-West Frontier Province. There are only two postal divisions in the Province, which is included with Kashmīr in a single telegraph division. The figures below show the postal business of the Province in 1903-4:—

Number of post offices and letter boxes	574
Number of miles of postal communication	2,088
Total number of postal articles delivered:—	
Letters	3,730,272
Postcards	3,609,970
Packets	472,082
Parcels	91,910
Newspapers	428,584
Value of stamps sold to the public	Rs. 216,810
Value of money orders issued	Rs. 4,601,827
" " " paid	Rs. 2,967,848

Famine.

Though parts of the Province are liable to drought and occasional scarcity, famine conditions have never been recorded in any part of it. Most of the cultivated area enjoys good rainfall or irrigation, or both. The pressure of the population on the soil is comparatively light; the people are enterprising and usually have other resources besides agriculture. These include service in the army, the local militia corps, the civil and border military police, employment by railway and steamship companies as navvies and stokers, and trade, especially in Kohāt salt, and in forest produce in Hazāra.

In Hazāra the holdings are, generally speaking, fairly large; and

the rainfall is so copious that during the last twenty years there has never been any serious failure of the crops, except in one or two isolated tracts. Peshāwar District as a whole is practically secure from drought, except in part of the Peshāwar *tahsīl*, where the holdings are comparatively small, and the irrigation from the Bāra river somewhat precarious, and in parts of the Naushahra and Mardān *tahsīls*, where cultivation is wholly dependent on the rainfall; but even in the insecure parts of these two *tahsīls* the people trade in wool and salt, and are not wholly dependent on cultivation. In Bannu a considerable portion of the cultivated area is irrigated and secure; and though the people of the unirrigated tracts are sometimes compelled to tide over a season of scarcity by migrating with their cattle to more favoured parts of their own or neighbouring Districts, the average rainfall, if small, is sufficient for the light but fertile soil, the surplus of one good harvest covers the deficiencies of many, and a succession of bad harvests is seldom experienced. In Kohāt the rainfall is fairly constant, part of the area is irrigated and practically secure, and the salt-mines and forests in the barren tracts provide those who are most liable to feel the pinch of scarcity with the means of earning a livelihood as carriers of salt and wood. In Dera Ismail Khān the rainfall is scanty and capricious; but the Indus valley is never actually confronted with scarcity, and the people in the *dāman* tract, whose revenue is in ordinary years trifling as compared with the crop harvested, migrate in seasons of scarcity to the Indus valley, and when seasonable rain falls return to their own villages and recoup themselves by bumper crops. Many of these tribes, being of Powinda origin, are also able to eke out a livelihood by trading down country. The whole of the Province is thus fairly secure from famine, and no relief is usually necessary beyond suspensions and remissions of land revenue.

Administration.

The North-West Frontier Province comprises both British Districts and also the tribal areas under the political control of the British Government which stretch northward and westward towards Afghānistān. In 1901 it was constituted a separate administration, and placed under the control of a Chief Commissioner, who is also, in the political areas, Agent to the Governor-General of India. Lieutenant-Colonel Sir H. A. Deane was appointed to this office, which he still holds. His staff consists of members of the Indian Civil Service, military officers of the Political department of the Government of India and the Punjab Commission, members of the Provincial and Subordinate Civil Services, Police officers, and officers specially recruited for the departments requiring special knowledge. The direct administrative functions of government are performed by the Chief Commissioner through a Revenue Commissioner (who is also Revenue and Financial Secretary to the Chief

Commissioner, Director of Land Records and Agriculture, Commissioner of Excise, Superintendent of Stamps, Registrar-General, Inspector-General of Registration and Registrar of Joint-Stock Companies, and as regards Courts of Wards fulfils the functions of the Financial Commissioner and Commissioner in the Punjab), a Secretary, an Assistant Secretary, a Staff officer for militia and border military police, and a Personal Assistant. The following are the heads of departments: the Administrative Medical Officer (also in charge of jails and sanitation), the Inspector-General of Education and Archaeological Surveyor, and the Inspector-General of Police. The Officer commanding Royal Engineers is head of the Public Works department, but the canals in Peshāwar District are under the Irrigation department of the Punjab. The Accountant-General of the Punjab exercises control over the finances of the Province.

The British territory in the Province is divided into five Districts, of which the largest, Dera Ismail Khān, has an area of 3,401 square miles, and the smallest, Bannu, 1,676 square miles. Particulars regarding each District will be found in Table V on p. 212.

Each District is under a Deputy-Commissioner, and is divided into sub-collectorates, called *tahsīls*, from 2 to 5 in number. A *tahsīl* is in charge of a *tahsīldār*, who is invested with criminal, civil, and revenue powers, and is assisted by a *naib-tahsīldār*, who exercises only criminal and revenue powers. Subordinate to each *tahsīldār* are 2 or 3 field *kānungos* or revenue officials, each of whom supervises from 13 to 19 *patwāris* or accountants. A *patwāri* maintains the revenue records of 4 or 5 villages. Every village has one or more village headmen who collect the revenue, and *chaukīdārs* or village watchmen. Yūsufzai, Mardān, and the Naushahra *tahsīl* in Peshāwar, and the *tahsīls* of Thal in Kohāt and Tānk in Dera Ismail Khān, form subdivisions, each in charge of an Assistant or Extra-Assistant Commissioner. Peshāwar city is also in charge of a subdivisional officer. The District is the unit for police, medical, and educational administration; and the ordinary staff of each includes a District Superintendent of police, a Civil Surgeon, who is also Superintendent of the District jail, and a District Inspector of schools. The Province forms a single educational circle, and only possesses one Forest division, that of Hazāra, which comprises the District of that name and is in charge of a Deputy-Conservator under the Revenue Commissioner. There are four divisions of the Roads and Buildings branch of the Public Works department, each under an Executive Engineer; and one division (Peshāwar) of the Irrigation branch in charge of an Executive Engineer, who is subordinate to the Superintending Engineer, Jhelum Circle, Punjab, and under the control of the Chief Engineer, Irrigation branch, Punjab.

The territories lying north and west of the British Districts are

divided into five Political Agencies—Dīr, Swāt, and Chitrāl; the Khyber; the Kurram; and Northern and Southern Wazīristān—each under a Political Agent. The principal frontier chieftainship under the political control of the Agent to the Governor-General in the North-West Frontier Province is Chitrāl, which is included in the Dīr, Swāt, and Chitrāl Agency. Other chieftainships in this Agency are the Khānates of Dīr and Nawagai (comprising most of Bājaur). Both of these are divided into numerous minor Khānates, held on a kind of feudal tenure by relatives of the chief Khāns. The title of Nawāb has recently been conferred on the Khān of Dīr. In the remaining tribal territories nothing approaching an organized state can be said to exist.

Legislation and justice.

Under the North-West Frontier Province Law and Justice Regulation of 1901, custom governs all questions regarding succession, betrothal, marriage, divorce, the separate property of women, dower, wills, gifts, partitions, family relations such as adoption and guardianship, and religious usages and institutions, provided that the custom be not contrary to justice, equity, or good conscience. In these matters the Muhammadan or Hindu law is applied only in the absence of special custom.

The Legislative Council created for the Punjab in 1897 had jurisdiction over the British Districts of the North-West Frontier Province, until by the constitution of the latter as a separate administration in 1901 its jurisdiction was withdrawn, and the Province now has no Council. The following are the chief legislative measures affecting the Province which have been passed since 1880:—

Acts of the Governor-General in (Legislative) Council.

The District Boards Act, XX of 1883.
The Punjab Municipal Acts, XIII of 1884 and XX of 1891.
The Punjab Tenancy and Land Revenue Acts, XVI and XVII of 1889.
The Punjab Land Alienation Act, XIII of 1900, as modified by Regulation I of 1904.

Regulations of the Governor-General in (Executive) Council.

The Frontier Crimes Regulation, III of 1901.
The Frontier Murderous Outrages Regulation, IV of 1901.
The North-West Frontier Province Law and Justice Regulation, VII of 1901, which embodies certain provisions of the Punjab Courts Act, XVIII of 1884 (as amended by Acts XIII of 1888, XIX of 1895, and XXV of 1899).

Acts of the Punjab Legislative Council.

The Punjab Limitation Act, I of 1900.
The Punjab Municipal Amendment Act, III of 1900.
The Punjab Riverain Boundaries Act, I of 1899.
The Punjab Descent of *Jāgīrs* Act, IV of 1900.

The administration of justice in the British Districts was not affected by their transfer from the Punjab, except that the supreme court in both civil and criminal matters is now that of the Judicial Com-

missioner, which has taken the place of the Chief Court of the Punjab. Subordinate to him are the two Divisional and Sessions Judges of Peshāwar and the Derajāt. As Divisional Judges these officers decide most of the appeals in civil suits from the courts of first instance. As Sessions Judges they try sessions cases, with the aid of assessors, and hear criminal appeals. Thus the Divisional and Sessions Judges in this Province fulfil the functions of District and Sessions Judges in the Regulation Provinces. Appeals in minor civil suits from the Munsifs' courts are heard by the District Judge, whose court is also the principal court of original civil jurisdiction in the District. The Divisional and District Courts are established under Regulation VII of 1901, which also provides for the appointment of Subordinate Judges (exercising unlimited civil jurisdiction) and Munsifs. The latter are of three grades, the jurisdiction of a first-grade Munsif being limited to suits not exceeding Rs. 1,000 in value. Two Munsifs are also invested with the powers of a Small Cause Court, under Act IX of 1887.

The criminal courts are those established under the Code of Criminal Procedure. The Deputy-Commissioner is *ex-officio* District Magistrate, and as such is ordinarily empowered to try all offences not punishable with death, and to inflict sentences of seven years' imprisonment. Additional District and subdivisional magistrates are usually invested with these powers. Assistant and Extra-Assistant Commissioners are, when qualified, appointed magistrates of the first class. *Tahsīldārs* generally have second and *naib-tahsīldārs* third-class powers. Honorary magistrates, sitting singly or as benches, also exercise first or second, but more commonly third-class magisterial powers in Districts or smaller local jurisdictions. In all Districts an offender may be tried by a council of elders under the Frontier Crimes Regulation, and the Deputy-Commissioner may pass any sentence of imprisonment not exceeding fourteen years in accordance with the findings of the council. Sentences exceeding seven years require the confirmation of the Chief Commissioner, who has also revisional jurisdiction in all cases under the Frontier Crimes Regulation.

The revenue courts established under the Punjab Tenancy Act are those of the Revenue Commissioner, Collector (Deputy-Commissioner), and Assistant Collectors of the first and second grades. These courts decide all suits regarding tenant-right, rents, and divers cognate matters in which the civil courts have no jurisdiction. Appeals from the Assistant Collectors ordinarily lie to the Collector, and from him to the Revenue Commissioner with certain limitations.

As regards the territories beyond the border, the provisions of the Indian Penal and Criminal Procedure Codes, and of the Frontier Crimes and Murderous Outrages Regulations, have been extended (with certain modifications) to the administered portions of the Political

Agencies of Dīr, Swāt, and Chitrāl, the Khyber, the Kurram, Northern and Southern Wazīristān, and also to the Shirāni country under the provisions of the Foreign Jurisdiction and Extradition Act. The Political Agents in Northern and Southern Wazīristān and the Kurram exercise all the powers of a District Magistrate and Court of Session in respect of offences punishable under the Indian Penal Code, the functions of a High Court as regards appeal, reference, and revision being exercised by the Judicial Commissioner.

The Registration agency is chiefly official. All Deputy-Commissioners are registrars and all *tahsīldārs* are sub-registrars under the Act; but there are also five non-official sub-registrars, who are remunerated by a percentage on the fees collected. In 1903 the Province had 28 registering officers and 9,996 documents were registered. General control over registration is exercised by the Revenue Commissioner.

Finance.

The revenue and expenditure of the North-West Frontier Province are wholly Imperial, and separate figures for its finances are available only since 1902-3 (see Table X on p. 216). Speaking generally, the receipts from irrigation have largely increased within the past few years in Peshāwar, the only District in which they are separated from the land revenue receipts. The land revenue was below the average in 1902-3, a year unfavourable for agriculture. The receipts under this head will be enhanced on the completion of the reassessments now in progress in several Districts. Other heads of receipt show a steady tendency to increase. The expenditure of the new Province, with its growing requirements, also tends to rise. The large excess of expenditure over income is due to the geographical position and political importance of the Province, considerations of imperial policy calling for special outlay under Political (which includes subsidies to tribes, maintenance of frontier militias and tribal levies), police, general administration, and civil public works.

Land revenue.

The character of the land tenures in the settled Districts of the North-West Frontier Province generally resembles those of the PUNJAB, and only such as present peculiar local features will be here described. Among the Pathāns, who own the largest amount of land in the Province, the original occupation of the land may be described as a tribal tenure, a tribe holding a tract of land which was divided into *tappas* or lots each held by a main subdivision of the tribe; these lots were again divided into blocks, each held by a section (*khel*) of the subdivision; these blocks were yet again divided into 'sides' (*kandi* or *taraf*), held by subsections of the *khel*, generally branches of what was originally a single family; and finally each *kandi* was subdivided into shares (*bakhra*), each held by an individual proprietor. The *bakhra* did not, however, form a single compact plot of land, for, to ensure equality, every

kandi was divided into *wands* according to the nature of the soil and the facilities for irrigation, and a *bakhra* comprised one or more fields in each *wand*. These fields usually ran the whole length of the *wand*, and as population increased the fields became so narrow that their cultivation was difficult. This, combined with the development of well and canal cultivation, has forced the people to abandon the old system of division, and the old practice of a periodical redistribution of holdings (*vesh*).

A characteristic of the Pathān tenure was the periodical redistribution (*vesh*) of the land among not only the individual members of a section, but even among the various sections of the tribes as a whole. This redistribution was made by lot, if the majority desired it. The shares on which the original partition was made were in some cases maintained, but in others every male, and in others again every male and female of the tribe, received an equal share. The last method was followed in a remarkably complete form in the Marwat (Bannu District) and Tānk (Dera Ismail Khān) *tahsīls*, in which a *khulla* or 'mouth' *vesh* was made, every man, woman, and child receiving a share. The period for which a *vesh* was made was rarely less than five or more than fifteen or twenty years. Even as late as 1904 a redistribution of two large estates in Marwat, based on the existing number of 'mouths,' was allowed, but in many other cases it was held that the custom had become obsolete. The system prevailed more or less in every District except Hazāra, and among every tribe save the Wazīrs. Traces of it still linger in Upper Mīrānzai (Kohāt District) and Yūsufzai (Peshāwar); but they are rapidly disappearing, and the tribal shares are now only maintained as a basis for the distribution of water for irrigation, or for the partition of land still held in common. In the unadministered territories, however, the system survives. For example in Buner, and among the Isazai clans, the land and houses held by each clan are still divided among the adult males. In Swāt the *vesh*, which originally extended to the whole valley, so that a tribesman had to change land, house, and village periodically, is now limited to the village and the land within its limits.

The method and standard of assessments in the British Districts of the Province are the same as in the PUNJAB, but in some, for political reasons, the assessments are lighter. Thus in Peshāwar the demand is only 52 per cent. of the estimated half 'net assets.' In Dera Ismail Khān the recent settlement fixed a demand of 71 per cent., and in Kohāt from 70 to 75 per cent., of half 'net assets.' In Hazāra and Bannu Districts, now under reassessment, the term of the old settlements was thirty years, and the existing demand is extremely light. The term is twenty years in Peshāwar, and that period has been fixed provisionally for the latest revisions in Kohāt and Dera Ismail Khān. As a rule, the demand is fixed for the term of settlement; but owing

to the uncertainty of the seasons and the precarious returns from cultivation, fluctuating assessments have been introduced in parts of Dera Ismail Khān, and it is proposed to extend the system to Marwat (Bannu). Elsewhere fixed cash assessments work satisfactorily.

Of the Agencies, only KURRAM and the Tochi valley (Northern Wazīristān) pay land revenue to the British Government. The former was summarily assessed in 1894 for a period of ten years, and is now being reassessed. On the occupation of the Tochi valley in 1895 the Daurs undertook to pay Government a tithe of the gross produce, and pending a settlement this was commuted into an annual payment of Rs. 8,000 in cash. A regular settlement has now resulted in a demand of Rs. 3,600.

The Punjab Alienation of Land Act (XIII of 1900) has been extended to Hazāra, Dera Ismail Khān, and Bannu; but it is not proposed to apply it to the purely Pathān Districts of Peshāwar and Kohāt, in which the feeling of personal and individual ownership is strong, and interference with freedom of transfer would be resented. In independent territory absolute free trade in land has been the rule from time immemorial.

Miscellaneous revenue.

Salt is obtained from the Kohāt salt quarries. Under Sikh rule these were farmed to local chiefs. At annexation light duties were imposed, allowances being made to the Khān of Teri and other chiefs to secure their co-operation in the new arrangements, and a preventive line was established on the Indus to prevent the export of Kohāt salt to the cis-Indus territory. In 1883 the duty was raised to 8 annas per local maund ($102\frac{17}{28}$ lb.). In 1896 the duty was increased to Rs. 2 per local maund, and the preventive line was withdrawn, but the prohibition against the export of this salt to cis-Indus territory was maintained. The management of the quarries, which was formerly in the hands of the Punjab Government, was transferred to the Northern India Salt Revenue department in 1899. The Deputy-Commissioner of Kohāt District is *ex-officio* Deputy-Commissioner of Salt Revenue.

Kohāt salt is greyish to black in colour, but of good quality, chemical analysis showing that it possesses from 87 to 94 per cent. of chloride of sodium. Traders purchase the salt they require direct from the miners under the supervision of the officers of the Salt department. Since 1903 the duty has been Rs. 1–8 per maund of 82 lb. The quarries are at Jatta, Mālgīn, Bahādur Khel, and Kharak. A little cis-Indus rock-salt is imported, but practically all the salt consumed in the Province is obtained from the local source. About half the salt produced in the Kohāt quarries is exported to Afghānistān, Tīrāh, Buner, and the Dīr, Swāt, and Chitrāl Agency. The registered export to Afghānistān amounted in 1903–4 to 1,285 tons, compared with 564 tons in 1901–2.

Details of the quantities of salt sold for consumption within the Districts which lie west of the Indus in this Province and the Punjab, and of the revenue derived therefrom, are given in the following table:—

	Salt sold at the mines in Kohāt District.	Salt imported from cis-Indus mines Division.	Salt exported beyond the Province.	Salt placed for consumption in the area described.	Gross revenue realized, exclusive of miscellaneous receipts.
	Tons.	Tons.	Tons.	Tons.	Rs.
1880-1 to 1889-90 (average)	20,614	Figures not available.	Figures not available.	Figures not available.	1,79,624
1890-1 to 1899-1900 (average)	20,372	"	"	"	3,55,878
1900-1	16,011	100	9,913	6,285	7,01,510
1903-4	16,464	325	8,563	8,183	6,73,965

The incidence of consumption per head was 11·11 lb. in 1898-9, 7·01 lb. in 1900-1, and 7·43 lb. in 1903-4.

The people being mainly Muhammadan generally abstain from the use of intoxicating liquors, but not from drugs. Opium and *charas* are consumed in considerable quantities in Peshāwar and the tribal territories which adjoin that District, their place being taken by *bhang* in the two southern Districts of the Province. The use of spirituous liquor is virtually confined to the Hindu townspeople and the immigrant population of the cantonments. The consumption of intoxicants is, however, low as compared with the Punjab, being in 1903-4 only 10·61 gallons of Indian spirit, 1·45 seers of opium, and 4·43 seers of hemp drugs for every 1,000 of the population in British Districts. Whether the consumption is increasing or not it is impossible to say, as the population from which consumers are mostly drawn is to a large extent immigrant and varies in numbers. The incidence of consumption during the triennium ending 1903-4 shows a slight downward tendency.

Prior to annexation, the poppy was cultivated only to a limited extent in the frontier Districts, and its cultivation was gradually interdicted until, at the time of the formation of the Province in 1901, it had entirely ceased. The opium consumed now comes entirely from outside. The annual consumption is small, amounting to only 60 or 70 maunds a year; and, of this, 24 maunds are allotted to the Province out of the 200 maunds of Bengal opium which the Benares Agency supplies annually to the Punjab. The latter is sold retail at Rs. 16 a seer, of which sum Rs. 7-8 is credited to the Province. Mālwā opium is imported direct from Ajmer and pays duty at the rate of Rs. 4 per seer, while some Kashmīr and Afghān opium is admitted on payment of half that duty. Opium is produced in the Punjab, and opium which has already paid duty in that Province is admitted free of duty. The Province could be easily supplied with almost all the opium

it needs from the Jalālābād valley of Afghānistān, but that source of supply is uncertain owing to the unsettled excise policy of the Amīr.

Country spirit is prepared in two Government distilleries, at Bannu and Dera Ismail Khān, which supply Bannu and Dera Ismail Khān Districts, Peshāwar, Hazāra, and Kohāt Districts being supplied from the Rosa Distillery near Shāhjahānpur (United Provinces), or by wholesale vendors and private distilleries in the Punjab, whence free transport of spirit is allowed. The demand for spirit in Peshāwar District is considerable, amounting to about 10,000 gallons a year. This is due to the large consumption in the city.

There are no breweries in the Province, the Murree Brewery Company supplying the British troops in the garrisons at Peshāwar, Cherāt, and Naushahra, and the detachments which spend the summer in the Hazāra hills.

The hemp plant grows spontaneously in Hazāra, and along the low hills which skirt the other Districts; but most of the *bhang* used comes from the Punjab, the drug being placed in bond on arrival until the duty (Rs. 4 a maund) has been paid. The consumption of *bhang* in the Districts of Bannu and Dera Ismail Khān is considerable. *Charas* produced in Central Asia is imported from the Punjab under bond. On the removal from bonded warehouses, duty is levied at the rate of Rs. 6 a seer. A certain amount of inferior *charas* from Bokhāra is probably smuggled via the Malakand into the Peshāwar valley through Chitrāl, and to prevent this the Mehtar of Chitrāl was required in 1904 to impose a prohibitive duty of Rs. 7 a seer on all *charas* transported through his territories.

The number and location of shops for the retail vend of liquor, opium, and drugs in each District are determined each year by the Deputy-Commissioner and the licences are publicly auctioned. Licences for the sale of imported liquors and beer may be granted at fixed fees to respectable merchants in cantonments and to hotel-keepers and refreshment-rooms.

In the Agencies the Opium and Excise Acts are not in force, but arrangements have been made under executive authority in the Kurram and Tochi for the control of the sale of liquors and drugs. In the Kurram two shops have been licensed and in the Tochi seven, the licences for which realized Rs. 3,940 in 1903–4. The Dauris are notorious for their excessive use of drugs.

The total excise revenue in 1903–4 amounted to 2 lakhs. Of this sum, Rs. 34,000 was realized on account of opium, Rs. 84,000 on account of country-made spirits and fermented liquors, Rs. 25,000 on account of imported spirits, Rs. 41,000 on account of *charas*, and Rs. 9,000 on account of *bhang*.

The net revenue from sales of stamps in 1903–4 was 2·3 lakhs in the case of judicial stamps, and 1·4 lakhs in the case of non-judicial. In

the same year Rs. 99,000 was collected on account of income tax from 1,823 persons. The incidence of the tax per assessee was Rs. 42, and 87 persons paid tax out of every 1,000 of the population.

Local and municipal.

The village community, characteristic of some parts of India, is not indigenous among the Pathāns. Its place as a social unit is, to some extent, taken by the tribe, which is held together by the ties of kindred and a common ancestry, real or imaginary. So strong was the communal instinct in the tribes, that by the practice called *vesh*, traces of which still exist in Swāt and other independent territories (as among the ancient Greeks, Gauls, and Germans), all lands, water-rights, and even houses owned by any one tribe were periodically redistributed. Before annexation different branches of a tribe, or even different tribes, lived together for mutual protection; but such aggregations were not properly speaking village communities, for the headmen of one *kandi* or sub-section acknowledged no responsibility for, and claimed no authority over, the members of another *kandi*. As a result of British rule, something resembling the village community, in which the village headmen are jointly responsible for the whole, has been evolved; but the tribal division into *kandis* remains very marked.

The history of local self-government in this Province before its separation will be found in the article on the PUNJAB. No municipalities were constituted under Act XXVI of 1850; but between 1867 and 1873 Harīpur and Kulāchi, and all the District head-quarters, except Kohāt, were made municipalities under Act XV of 1867. By 1883, Act IV of 1873 had been extended to these, as well as to Kohāt and five of the smaller towns, raising the number of municipalities to twelve. These were reconstituted under Act XIII of 1884, and again under Act XX of 1891, excepting the municipalities of Shankargarh and Pahārpur, which were abolished. The Province now possesses ten municipalities, which, in 1904, contained 162 appointed members, and 50 sitting *ex officio*. Of these, 51 were officials and only 23 Europeans. The total population within municipal limits in 1901 was 186,375, of whom 73,343 were enumerated in Peshāwar, Dera Ismail Khān and Kohāt being the only other municipalities with a population exceeding 10,000. In 1893 the town of Tānk was declared a 'notified area' under the Act of 1891, and in 1903 the small sanitaria of Dunga Gali and Nathia Gali (the summer head-quarters of the Provincial Administration) were similarly constituted. Table XI on p. 217 gives the chief items of municipal income and expenditure. The incidence of taxation in 1903-4 was Rs. 2, and that of income Rs. 2-10-9, per head of the population within municipal limits. Octroi is the chief source of income; and Harīpur, Abbottābād, and Peshāwar are the only municipalities in which other forms of taxation are in force.

Each of the five Districts of the Province has a District board, constituted under Act XX of 1883. The members are all appointed by the Chief Commissioner. In the Harīpur and Abbottābād *tahsīls* of Hazāra District the elective system was in force till 1903, when it was abolished. The total number of members in 1904 was 216, of whom 49 were appointed *ex officio* and 167 nominated. The two local boards of Bannu and Marwat, which existed when the Province was first constituted, were abolished in 1904.

The income of a District board is mainly derived from the local rate, a consolidated cess of Rs. 10-6-8 per cent. on the land revenue. The expenditure is chiefly on education, the maintenance of dispensaries, vaccination, roads and resthouses, arboriculture, ferries, cattle-pounds, horse-breeding, and horse and cattle fairs. The greater part of the income being ear-marked, there is little room for local initiative; and, as in the Punjab, the District boards are chiefly useful as consultative bodies.

Public works.

All public works, except canals and railways, are in charge of the Commanding Royal Engineer, North-West Frontier Province, an officer of the Military Works department, who is also *ex-officio* Secretary to the Chief Commissioner. The revenue administration and maintenance of the Swāt River and Kābul River Canals and the maintenance of the Bārā River Canal are in charge of the Chief Engineer, Irrigation branch, Punjab, who is also *ex-officio* Secretary to the Chief Commissioner. The canals are directly managed by an Executive Engineer with head-quarters at Mardān, whose division is included in the circle of the Superintending Engineer, Jhelum Circle, Punjab. The Swāt River Canal was opened in 1885. It was primarily constructed as a protective work, but has proved very remunerative, and irrigated a maximum area of about 250 square miles in 1903-4. The Kābul River Canal commenced irrigation in 1893, and in 1903-4 irrigated about 45 square miles. The Hazār Khāni branch, an extension of this canal, is under construction, and in connexion with it a scheme for electric power for Peshāwar cantonment has been designed.

Army.

The total strength of the British and Native army stationed within the Province on June 1, 1903, was as follows: British, 2,946; Native, 19,991; total, 22,937. The Province is garrisoned by the Peshāwar and part of the Rāwalpindi divisions, and by three independent brigades of the Northern Command. The military stations in 1904 were:—in the Peshāwar division, Chakdarra, Chitrāl, Dargai, Drosh, Jamrūd, Malakand, Mardān, Naushahra, and Peshāwar; in the Rāwalpindi division, Abbottābād; in the Kohāt brigade, Fort Lockhart, Hangu, Kohāt, and Thal; in the Derajāt brigade, Dera Ismail Khān, Drazinda, Jandola, Jatta, and Zām; and Bannu brigade, Bannu.

All these stations are garrisoned by Native infantry and, if in the plains, by Native cavalry also. British infantry regiments are cantoned at Peshāwar and Naushahra, British artillery at Peshāwar, and Native artillery (mountain batteries) at most of the other stations. Sappers and miners are stationed at Peshāwar and Drosh.

Up to 1886 a special military force entitled the Punjab Frontier Force, which was under the direct orders of the Government of the Punjab, maintained the peace of the border. In 1886 this force was transferred to the control of the Commander-in-Chief, and its regiments are no longer restricted to service on the frontier. The cavalry regiments are the 21st Prince Albert Victor's Own, the 22nd, 23rd, 25th, and Guides Cavalry. The infantry regiments, which rank as light infantry, are the Guides Infantry, the 51st, 52nd, 53rd, and 54th Sikhs, the 55th Coke's Rifles, 56th Infantry, 57th Wilde's Rifles, 58th Vaughan's Rifles, 59th Scinde Rifles, and 5th Gurkha Rifles. Prior to 1899, the garrisons on the north-west frontier were largely scattered in isolated outposts, rendering concentration at any threatened point difficult. Since then a number of outlying garrisons have been withdrawn, their posts being handed over to militia and border military police, the total strength of which forces is just under 10,000 men. Under this scheme Naushahra has become a large cantonment, and mobile columns are kept always ready at Peshāwar, Mardān, Naushahra, Kohāt, Bannu, and Dera Ismail Khān.

Police and jails.

The administration of the civil police force in the settled Districts of the North-West Frontier Province is now vested in an Inspector-General. The force in each District is under a Superintendent, who works under the general control of the Deputy-Commissioner (District Magistrate). Three Assistant Superintendents are also posted to Peshāwar District.

After the annexation of the Punjab, the police duties in the trans-Indus Districts were carried out by a force known as the Peshāwar and Derajāt mounted and foot levies or political contingent, which was under the control of the Deputy-Commissioner in each District. This force consisted of local tribesmen nominated by their chiefs, and its cost included subsidies to them. Just as in recent years the disciplined and orderly militia corps have been evolved from tribal levies, so this political contingent, in its civil aspect, was gradually transformed into a regular police force, while in its tribal aspect it has now been supplanted by the border military police. In 1863 the contingent was brought under the general police system of the Punjab, and placed for purposes of inspection under the Inspector-General of Police. In 1870 the Police Act was applied partially, and in 1889 it was applied in its entirety. The constables and subordinate officers of the civil police now form a Provincial service; but the gazetted officers are borne on

the cadre of the Punjab police, and receive promotion and acting allowances in the list of that Province.

The strength of the force within the five British Districts of the Province is 3,006 sergeants and constables, giving an average of one man to 4·4 square miles and to 700 persons. The unit of administration is the *thāna* or police station, under a sub-inspector, and road-posts and outposts are established where necessary. Nearly four-fifths of the force are armed with bored-out Martini-Henry rifles and bayonets. Every constable is also provided with a sword and baton. In regard to recruitment, the Police department has to compete with the army and militia, which offer better pay and prospects. It inevitably results that the best material is not attracted to the force. The training of constables is carried on in the Districts in which they are enlisted, but the superior grades are eligible for training in the Police school at Phillaur in the Punjab. Crime is watched by a special branch at head-quarters in charge of an Assistant Superintendent, but there is no separate force of detective police. Trained recorders of finger impressions are maintained in each District, but the central bureau used is that at Phillaur.

The village watchmen or *chaukīdārs* are appointed by the District Magistrate, on the recommendation of the village headmen. They provide their own arms, and are paid in kind by the proprietary body of the village to which they belong at the rate of Rs. 3 per month. Their duties are similar to those in other Provinces, but they are regarded as acting under the control of the village headmen, and as jointly responsible with the latter for the reporting of crime. In executive duties they are under the orders of the *tahsīldār*, but in all matters relating to the prevention and detection of crime and the collection of information they report to the police.

In the large towns municipal funds contribute towards the upkeep of the local police, and in cantonments special police are paid partly from Local funds; in some Districts ferry police are paid by the District boards. All these, however, are under the control of the Superintendent of police of the District. The Railway police form part of the general system of the Punjab Railway police, and are under the control of that Government. No tribes have been registered under the Criminal Tribes Act.

Statistics of cognizable crime (that is, offences for which the police may arrest without a magistrate's warrant) are shown below :—

Number of cases.	1902.	1903.
Reported	6,692	6,267
Decided in the courts	4,785	4,676
Ending in acquittal or discharge .	823	773
" conviction . . .	3,532	3,487

In the earlier days of the occupation of the frontier, the British sphere of influence was limited entirely to the plains. Little was known of the tribes living in the hill country across the border, and hardly any control was exercised over them. It was not even until a comparatively recent date that the question was finally decided as to whether many of these tribes came under Afghān or British jurisdiction. To guard against the constant incursions and raids of these tribesmen into British territory, the border military police was created out of what was known as the old frontier militia. The force was originally organized purely on the *silladāri* system. The leading Khāns and headmen living within the border received allowances, in return for which they produced a certain number of horse or footmen. The system naturally led to grave abuses. Vacancies were left unfilled; horsemen were without horses; and boys and old men, equally incapable of work, were nominated as foot-soldiers. The *silladāri* system was in consequence abolished, and the border military police is now on the same footing as any other force as regards pay and enlistment. The duties remain the same, but the advance of British occupation and the creation of the new militia corps have contributed further to the peace of the border.

The border military police corps under the control of the Deputy-Commissioner in each District is commanded by an Assistant Commissioner, usually a military officer in civil employment, except in Kohāt, where the commandant is an officer of police. The men are armed with Martini-Henry rifles, and are employed in garrisoning posts distributed along the administrative border, with a reserve at each head-quarters. The strength of the five corps is 2,061 men, of whom 289 are mounted.

When the Agencies across the administrative border were first occupied, they were garrisoned entirely by regular troops; but levies were raised from among the local tribesmen to convoy travellers, collect information, and act as a means of communication between the Political officers and the tribes. From these levies have been raised the present militia corps, which contain an equal proportion of men living on either side of the administrative border, and thus combine the advantages of local levies with the steadying element of outside influences. In all the Agencies except Dīr, Swāt, and Chitrāl, the levy corps have been disbanded, and the policy is being carried out of relieving the regular troops of the onerous and expensive work of garrisoning trans-border outposts. Chitrāl, Drosh, Chakdarra, the Malakand, Drazinda in the Shirāni country, and Jandola in Southern Wazīristān are now the only posts in the Agencies at which a garrison of regular troops is maintained. These corps are officered by British military officers, seconded for a period of five years from their regi-

ments. Their armament is the Martini-Henry rifle, Mark II. Although strictly speaking a border military police corps, the Samāna Rifles are generally counted in Kohāt District with militia corps; their armament and equipment are the same as those of the militia corps, but their British officers belong to the Punjab police. The total strength of the militia corps is 6,033 men, of whom 336 are mounted.

The experiment has also been lately tried of raising in Chitrāl a corps of scouts organized on the old feudal system of the country, with the Mehtar of Chitrāl as honorary commandant. The object is the creation of a body of trained marksmen to defend the passes into Chitrāl in the event of invasion. The corps has two British military officers, and the scheme contemplates the training of 1,200 men. The force is organized on an entirely different system from the militia corps, as its members are only called out for training in batches for two months in the year, and when not under training return to ordinary civil life. They are armed with ·303 rifles.

With the exception of the Bhittāni Levies in Dera Ismail Khān District, whose absorption in the Southern Wazīristān Militia is under contemplation, the only levy corps still existing are those in the Dīr, Swāt, and Chitrāl Agency. The Dīr levies are armed with rifles supplied by Government, but are under the orders of the Nawāb of Dīr. The principal responsibilities of this force are the security of communications, mail escorts, and the maintenance of order on the Chakdarra-Chitrāl road.

The Jail department is under the control of the Administrative Medical Officer of the Province. The number of jails (5) has remained unchanged since 1881. Those at Peshāwar and Abbottābād are in charge of the Civil Surgeon of the District, while the others, at Dera Ismail Khān, Bannu, and Kohāt, are in charge of the military medical officers who hold collateral medical charge of the Districts. These are all District jails, and there are no Central or subsidiary jails, long-term prisoners being transferred to cis-Indus jails, while the large judicial lock-ups at Mardān in Peshāwar District and at Teri and Hangu in Kohāt fulfil the requirements of subsidiary jails.

The table on the next page gives the chief statistics of jails for a series of years.

The daily average number of prisoners in 1881 and the three preceding years was abnormally high, a result of the succession of bad harvests which began in the autumn of 1877, and the drain of food-grains from the Province for the armies serving in Afghānistān. The unrest on the frontier also caused large numbers of persons to be sentenced to imprisonment in default of security for good behaviour. The steady decrease in mortality is largely due to the immunity from typhus fever enjoyed by prisoners of recent years. This disease was

endemic in the Frontier Districts and more especially in the Peshāwar valley, and caused as many as 58 deaths in the Peshāwar jail in 1881. Dysentery and pneumonia have also ceased to be so fatal as they were twenty years ago. The expenditure incurred on measures to improve the condition of jail life, together with the higher prices of food-grains and other articles, accounts for the steady rise in the daily average cost of maintenance per head during recent years. The earnings for 1881 were unusually large, a result of the employment of prisoners at Peshāwar on the railway then under construction in the vicinity of the jail, while the drop in the earnings for 1901, as compared with those for 1891, is due to alterations in the method of account. The chief industries carried on in the jails are paper-making, lithographic printing, weaving, and oil-pressing. Most of the out-turn is supplied to Government departments.

	1881.	1891.	1901.	1904.
Number of District jails	5	5	5	5
Number of subsidiary jails (lock-ups)	1	2	2	3
Average daily population :—				
(*a*) Male	1,649	1,159	1,191	1,233
(*b*) Female	63	55	43	47
Total	1,712	1,214	1,234	1,280
Rate of jail mortality per 1,000	70.68	25.54	12.16	14.84
Expenditure on jail maintenance Rs.	1,10,982	81,498	91,048	87,786
Cost per prisoner Rs.	64-13-2	67-2-1	73-12-6	68-9-4
Profits on jail manufactures Rs.	20,418	10,486	7,457	7,084
Earnings per prisoner Rs.	15-9-2	10-12-5	8-13-0	7-10-0

Education.

As now constituted, the inspecting staff of the Educational department in the North-West Frontier Province consists of an Inspector-General of Education, a Personal Assistant, and 4 District Inspectors. Most Districts have a District Inspector, but Kohāt, Bannu, and Daur in Northern Wazīristān are in charge of one District Inspector. The schools of the Kurram valley are inspected twice a year by the head master of the municipal high school at Kohāt.

The Province possesses no University of its own, and its only college is affiliated to the Punjab University at Lahore. The number of matriculations was 15 in 1891, 98 in 1901, and 71 in 1903.

The only college in the Province is the Edwardes Church Mission College at Peshāwar, opened in 1900-1. Seven of its students passed the Intermediate examination of the Punjab University in 1903.

The school curriculum is the same as that in force in the Punjab. At the close of 1903-4 the Province possessed 25 secondary schools, of which 15 were Anglo-vernacular (8 maintained by local bodies, 4 aided, and 3 unaided) and 10 vernacular schools, all maintained

by local bodies. These schools contained 1,421 pupils, excluding pupils in their primary departments.

At the close of 1903-4 the Province possessed 172 primary schools for boys, of which 145 were maintained by local bodies, 21 (mostly indigenous) were aided, and 6 unaided. These and the primary departments of the secondary schools contained 11,959 pupils.

The Province possesses 8 girls' schools: namely, 4 maintained by local bodies, 3 aided, and one unaided. These contained 578 pupils in 1903-4, in addition to which 1,721 girls were receiving instruction in private schools, and 21 in boys' schools, so that 2,316 girls in all were under instruction. These consisted of 1,381 Muhammadans, 781 Hindus, 153 Sikhs, and one native Christian. The municipal girls' schools at Dera Ismail Khān and Kohāt admit Muhammadan girls only, and Urdū is the medium of instruction. The other public schools are attended almost entirely by Hindus and Sikhs, and Gurmukhī or Hindī is taught in them. Dera Ismail Khān District returns the largest number of girl pupils (258), Hazāra 103, Kohāt 85, Bannu and Peshāwar 64 girls each.

In 1903-4 only 110 per 1,000 of the number of Muhammadan boys of school-going age attended schools of all kinds, and only 9,045 Muhammadans attended public schools for boys. Relatively the Muhammadan community is, in this Province, far behind the Hindus and Sikhs, from an educational standpoint. It is, however, progressing and, though progress is slow, there are signs of awakening in Hazāra and Kohāt Districts. Muhammadan education is especially encouraged by the award of 9 high and 13 middle-school Victoria scholarships annually; and, to foster it among the border tribes, 5 stipends are awarded to Wazīr and Shirāni boys, and 4 to Dauri boys, and two stipends have recently been granted to Mohmand boys in Peshāwar District. Special schools for Muhammadans are maintained at Dera Ismail Khān, Bannu, and Abbottābād. All these are elementary, but Peshāwar possesses an Islāmiya Anglo-vernacular high and an Anglo-vernacular middle school.

In 1903-4 there were 206 public and 744 private schools, in which 26,439 pupils of both sexes were being educated. This number is equivalent to 8 per cent. of the children of school-going age in the administered portion of the Province. The total expenditure amounted to Rs. 1,91,000. The number of girls in receipt of instruction was 2,326, of whom less than half were Muhammadans.

Only one newspaper is published in the North-West Frontier Province, the *Tuhfa-i-Sarhadd*, a weekly Urdū journal issued by the Bannu Mission and devoted to missionary enterprise.

The Medical department is under an Administrative Medical Officer. Two of the five British Districts and three of the Political Agencies are in charge of whole-time civil surgeons. Military medical officers

are in collateral charge of the other Districts and Agencies. A military assistant surgeon is in medical charge of the Khyber. Assistant surgeons are in subordinate charge of hospitals and dispensaries at the head-quarters of Districts and subdivisions. Minor dispensaries are in charge of hospital assistants of different grades. There are female dispensaries at Peshāwar and Kohāt, under female medical subordinates. The supply of hospital assistants is obtained chiefly from the Lahore Medical School.

Medical.

Of the 39 hospitals and dispensaries, 17 are maintained wholly, and one is aided, by Government. The others are maintained from Local and municipal funds. In 1904 there were 345 beds for males and 130 for females. The most important institution is the Egerton Hospital at Peshāwar, with accommodation for 42 male and 12 female in-patients. It is maintained from Local and municipal funds. An institution for the relief of lepers at Bāla Pīr's Ziārat, at Bālakot, Hazāra District, is supported by private subscriptions and to some extent by Local funds. The Church Missionary Society provides a large share of the medical relief available in the Province. It maintains the Duchess of Connaught Hospital for women at Peshāwar, and hospitals or dispensaries at Peshāwar, Bannu, Dera Ismail Khān, and Tānk. These institutions are not included in the statistics attached to this article. In 1901 they treated 1,139 in-patients and 36,960 out-patients, and in 1904 2,527 in-patients and 59,593 out-patients. The number of operations performed was 3,588 in 1902 and 4,330 in 1904.

There is no lunatic asylum in the Province, and patients are sent to the Punjab.

The Administrative Medical Officer is in charge of the Vaccination department. There are two divisional Inspectors for the Province, whose duties also include the checking of the registers of births and deaths. Each District has a native supervisor and a varying number of vaccinators supervised by the civil surgeon. The Kurram and Tochi Agencies have each one vaccinator. Small-pox is very common among the Pathāns, especially beyond the border. Vaccination is popular, but its extension is seriously interfered with by inoculation, an art practised by certain families and handed down from father to son. At the same time these practitioners are not bigoted adherents of their system; and excellent results have been obtained in Yūsufzai and neighbouring tracts by inducing them to learn vaccination, and then sending them back to their tribes not as inoculators but as vaccinators.

Surveys.

Surveys in the North-West Frontier Province have been the work of two distinct agencies, the Survey department and the local Revenue establishment. Peshāwar was surveyed by officers of the Survey department between 1863 and 1870, and Bannu and Dera Ismail Khān between 1874 and 1878; Hazāra

between 1865 and 1869, and again partially in 1888–92; Kohāt was topographically surveyed on the one-inch-to-the-mile scale in the years 1880–3.

In independent territory surveys have until the last two years been possible only when an expedition was in progress. Geographical reconnaissances based on triangulation were carried out in Chitrāl, Dīr, and Swāt in 1885, 1892, 1893, 1895, and 1901, and maps on the quarter-inch scale have been prepared. The more important passes in Chitrāl were again surveyed in 1904–5. In 1897–8 Bājaur and Buner, with part of Swāt and the Mohmand and Mamund countries, were roughly surveyed on the half-inch scale. A survey of the Khyber and part of Tīrāh on the one-inch scale was carried out in 1878–9, and survey operations in the latter country were extended during 1897–8. The settlement maps of Peshāwar were revised in 1890–4; those of Hazāra, Kohāt, Dera Ismail Khān, and Bannu are either still under revision or have been recently brought up to date. Reconnaissance maps of the Kurram valley on the quarter-inch scale were made in 1878–80, and the valley was again surveyed on the one-inch scale in 1894 and 1898. The cultivated area is now again under survey, in connexion with the settlement operations.

Wazīristān has been the scene of desultory operations whenever occasion offered since 1860, and maps of the whole country on the half- and quarter-inch scales exist, most of the work having been done since 1894. Survey operations are again in progress.

Further information oncerning the North-West Frontier Province will be found in the Punjab Border and General Administration Reports for the years from 1851–2 to 1900–1, and in the Annual Provincial Reports which have been published since 1901; in the Punjab *Census Reports* of 1871, 1881, 1891, and in the Punjab and North-West Frontier Province *Census Report* of 1901. Among the standard works on subjects connected with the Province may be mentioned: H. W. Bellew: *Punjab Frontier* (1868).—Maxwell: *Buddhist Explorations in the Peshāwar District* (1882).—Cole: *Memorandum on Ancient Monuments in Yūsufzai* (1883).—M. A. Stein: *Archaeological Tour in the Buner Country* (1898).—Major H. B. Edwardes: *A Year on the Punjab Frontier*, 1848–9 (1851).—R. Bosworth Smith: *Life of Lord Lawrence* (1901).—Lady Edwardes: *Life and Letters of Major-General Sir H. B. Edwardes* (1886).—Captain L. J. Trotter: *Life of John Nicholson* (1905).—Lord Roberts: *Forty-one Years in India* (1902).—H. W. Bellew: *Grammar and Dictionary of the Pashtu Language* (1901).—J. Darmesteter: *Chants Populaires des Afghans* (Paris, 1888–90).—J. G. Lorimer: *Grammar and Vocabulary of Wazīri Pashtu* (1902).—Paget and Mason: *Record of Expeditions against the North-West Frontier Tribes* (1849–85).—*The Pathān Revolt of* 1897 (Lahore).

TABLE I. General Genealogy of the Pathan Tribes

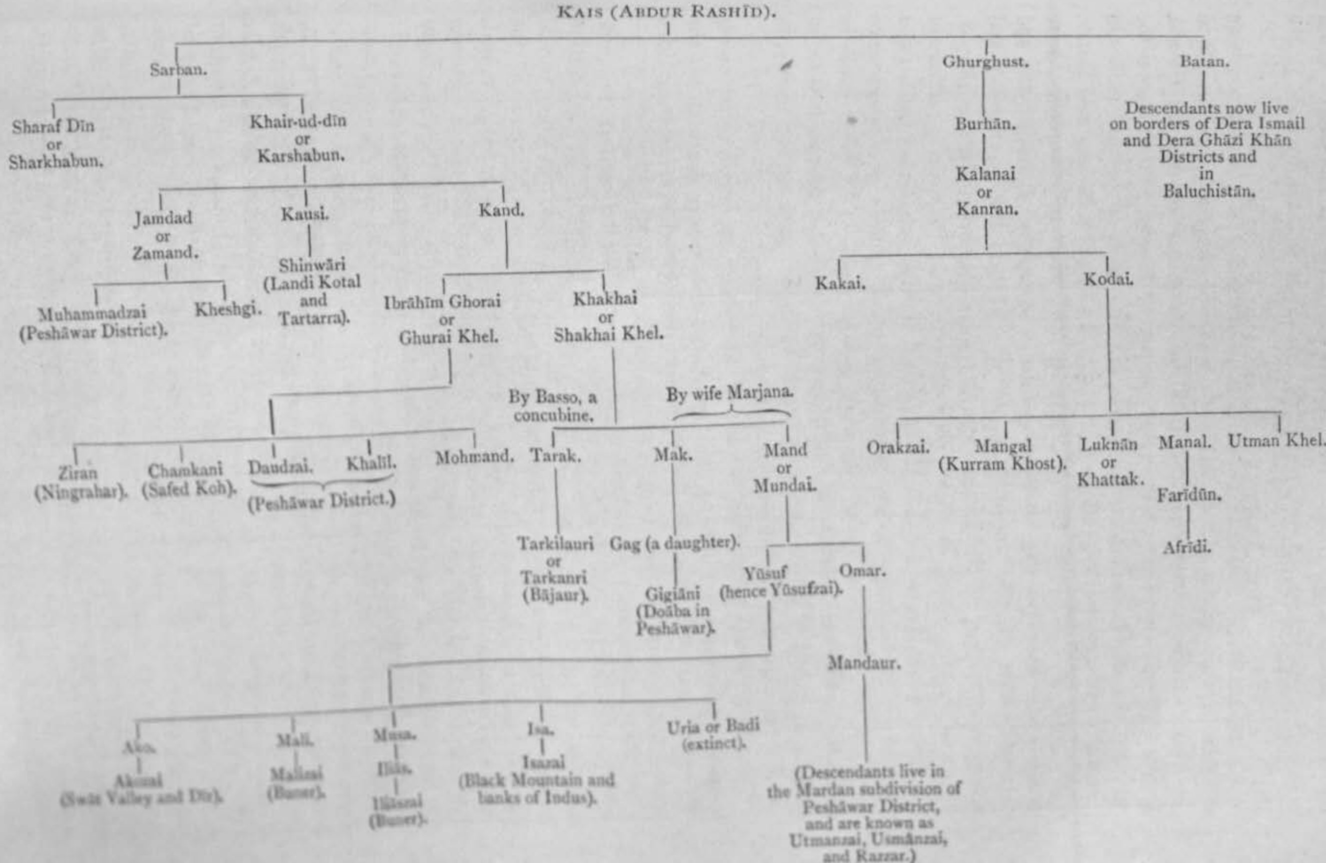


TABLE II

Expeditions undertaken against Frontier Tribes since the Annexation of the Punjab

Year.	Tribes against which undertaken.	Name of Commander.	Number of troops employed.*	Total British casualties.
1849	Villages of British and independent Baeza (Swāt).	Lieutenant-Colonel J. Bradshaw, C.B.	2,300	51
1850	Kohāt Pass Afrīdis.	Brigadier Sir Colin Campbell, K.C.B., (accompanied by the Commander-in-Chief, General Sir C. J. Napier, G.C.B.).	3,200	94
1851	Villages of British Mīrānzai.	Captain J. Coke	2,500 (including 655 levies).	5
1851–2	Mohmands	Brigadier Sir Colin Campbell, K.C.B.	1,597	9
1852	Mohmands (Affair at Panjpao).	" "	600	10
"	Ravizai	" "	3,270	40
"	Utman Khel	" "	2,200	18
"	Umarzai (Ahmadzai) Wazīrs.	Major J. Nicholson	1,500	28
1852–3	Hasanzai	Lieutenant-Colonel F. Mackeson, C.B.	3,800 (including Kashmīr troops, levies, and police, but excluding the reserve).	18
1853	Hindustāni Fanatics	" "	2,000 (including Kashmīr troops).	*Nil*
"	Shirānis	Brigadier J. S. Hodgson.	2,795	*Nil*
"	Bori Afrīdis	Colonel S. B. Boileau	1,740	39
1854	Michni Mohmands	Colonel S. J. Cotton	1,782	17
1855	Aka Khel Afrīdis	Lieutenant-Colonel J. H. Craigie, C.B.	1,500	34
"	Villages of British Mīrānzai.	Brigadier N. B. Chamberlain.	3,766	15
"	Rabia Khel Orakzais	" "	2,457	15
1856	Turis	" "	4,896 (including 150 levies).	8
1857	British villages on the Yūsufzai border.	Major J. L. Vaughan	400 In attack on Shaikh Jana.	5
			990 (including 140 levies) in the first attack on Narinji.	26
			1,625 (including 323 levies) in the second attack on Narinji.	9

* The numbers given in this column are in some cases only approximate, it being impossible in these cases to discover from the records the exact number of troops employed.

TABLE II (*continued*)

Expeditions undertaken against Frontier Tribes since the Annexation of the Punjab

Year.	Tribes against which undertaken.	Name of Commander.	Number of troops employed.*	Total British casualties.
1859	Khudu Khel and Hindustāni Fanatics.	Major-General Sir S. J. Cotton, K.C.B.	4,877	35
1859-60	Kābul Khel Wazīrs.	Brigadier-General Sir N. B. Chamberlain, K.C.B.	5,372 (including 1,456 police and levies).	20
1860	Mahsūds . . .	" "	6,796 (including 1,600 levies).	361
1863	Hindustāni Fanatics	Brigadier-General Sir N. B. Chamberlain, K.C.B., and subsequently Major-General J. Garvok.	9,000	908
1864	Mohmands . .	Colonel A. Macdonell, C.B.	1,801	19
1868	Bizoti Orakzai. .	Major L. B. Jones .	970 (including 240 police and levies).	55
"	Black Mountain Tribes.	Major-General A. T. Wilde, C.B., C.S.I.	12,544 (exclusive of a reserve of 2,218).	98†
1869	Bizoti Orakzai. .	Lieutenant - Colonel C. P. Keyes, C.B.	2,080 (including 419 police and levies).	36
1872	Dauris . . .	Brigadier-General C. P. Keyes, C.B.	1,826	6
1877	Jowaki Afrīdis .	Colonel D. Mocatta.	1,750 (exclusive of levies).	11
1877-8	" .	Brigadier-Generals C. P. Keyes, C.B., and C. C. G. Ross, C.B.	7,400	61
1878	Utman Khel . .	Captain W. Battye .	280	8
"	Rānizai . . .	Major R. B. P. P. Campbell.	860	*Nil*
"	Utman Khel . .	Lieutenant - Colonel F. H. Jenkins.	875	1
"	Zakka Khel Afrīdis.	Lieutenant - Colonel F. F. Maude, V.C., C.B.	2,500	11
"	Powindas, Sulaimān Khel, and others.	Colonel H. F. M. Boisragon.	640	13
1879	Zakka Khel Afrīdis.	Lieutenant - Colonel F. F. Maude, V.C., C.B.	3,750	18
"	Mohmands (Affair at Kam Dakka).	Captain O'M. Creagh, and subsequently Major J. R. Dyce.	600	24
"	Zaimukhts . .	Brigadier-General J. A. Tytler, V.C., C.B.	3,226	5

* The numbers given in this column are in some cases only approximate, it being impossible in these cases to discover from the records the exact number of troops employed.

† This number includes the casualties (64) in the Agror valley previous to the advance of the Hazāra Field Force.

TABLE II (*continued*)

EXPEDITIONS UNDERTAKEN AGAINST FRONTIER TRIBES SINCE THE ANNEXATION OF THE PUNJAB

Year.	Tribes against which undertaken.	Name of Commander.	Number of troops employed.*	Total British casualties.
1880	Mohmands . .	Brigadier-General J. Doran, C.B., and Colonel T. W. R. Boisragon.	2,300	5
"	Bhittannis . .	Lieutenant - Colonel P. C. Rynd.	721	5
"	Kābul Khel (Utmanzai) Wazīrs.	Brigadier-General J. J. H. Gordon, C.B.	800	*Nil*
1881	Mahsūds . .	Brigadier-Generals T. G. Kennedy, C.B., and J. J. H. Gordon, C.B.	8,531	32
1888	Hasanzai, Akozai, Parari Saiyids and Tikariwal.	Major-General J. W. McQueen, C.B., A.D.C.	12,554	
1890	Kidderzai Section of Largha Shirānis.	General Sir G. S. White, V.C., G.C.B.	1,750†	1
1891	Hasanzai and Akozai	Major-General W. K. Elles, C.B.	7,300	48
"	Orakzai . . .	Major-General Sir W. S. A. Lockhart, K.C.B., C.S.I.	7,381	95
1892	Isazai Clans . .	" "	5,997	*Nil*
1894–5	Mahsūds . .	" "	10,631	23
1896	Umra Khān of Jandol (Chitrāl Relief Force).	Major-General Sir R. C. Low, K.C.B.	14,900	122
1897	(1) Swātis and Utman Khel. (2) Bunerwal and Chamlawal.	Major-General Sir Bindon Blood, K.C.B.	8,071	532
"	Darwesh Khel Wazīrs	...	...	...
"	Mohmands . .	Major-General E. R. Elles, C.B.	6,458	30
1897–8	Darwesh Khel Wazīrs	Major-General G. Corrie-Bird, C.B.	7,262	17
"	Afrīdis and Orakzai .	Major-General Sir W. S. A. Lockhart, K.C.B., K.C.S.I.	40,000	1,019
1900–1	Mahsūds. . .	General W. Hill, C.B., from December 1, 1900, to August, 1901. Thereafter Brigadier-General Denning, D.S.O.	12,448	136
1902	Kābul Khel (Utmanzai) Wazīrs.	Major-General Sir C. C. Egerton, K.C.B., D.S.O.	2,880	21

* The numbers given in this column are in some cases only approximate, it being impossible in these cases to discover from the records the exact number of troops employed.

† Number of Punjab columns only: two other columns, operating from Baluchistān, took part in the expedition.

TABLE III. Temperature, North-West Frontier Province

Station.	Height in feet of Observatory over sea-level.	Average temperature (in degrees Fahrenheit) for twenty-five years ending 1901 in							
		January.		May.		July.		November.	
		Mean.	Diurnal range.	Mean.	Diurnal range.	Mean.	Diurnal range.	Mean.	Diurnal range.
Peshāwar	1,110	51·5	23·6	84·0	28·4	91·1	23·7	61·5	31·5
Dera Ismail Khān	594	54·6	28·3	89·0	29·0	92·9	21·2	65·0	34·5

Note.—The diurnal range is the average difference between the maximum and minimum temperatures of each day.

TABLE IV. Rainfall, North-West Frontier Province

Station.	Average rainfall (in inches) for twenty-five years ending 1901 in												Total of year.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Peshāwar . .	1·65	1·29	1·90	0·95	0·96	0·30	1·47	2·12	0·87	0·12	0·76	0·48	12·87
Dera Ismail Khān .	0·51	0·76	0·81	0·73	0·54	0·63	2·19	1·61	0·27	0·05	0·22	0·29	8·61

TABLE V. DISTRIBUTION OF POPULATION IN NORTH-WEST FRONTIER PROVINCE, 1901

District or Agency.	Area in square miles.	No. of towns.	No. of villages.	Total population.			Urban population.			Persons per square mile in rural area
				Persons.	Males.	Females.	Persons.	Males.	Females.	
Hazāra	3,391	4	1,264	560,288	299,708	260,580	24,485	14,435	10,050	158
Peshāwar	2,605	8	793	788,707	428,582	360,125	138,910	84,657	54,253	249
Malakand, Dīr, Swāt, Chitrāl *	...	1	...	8,128	8,037	91	8,128	8,037	91	...
Kohāt	2,609	1	278	217,865	122,174	95,691	30,762	22,492	8,270	72
Kurram	1,278	1	106	54,257	29,734	24,523	2,847	2,508	339	40
Bannu †	1,680	2	392	231,485	126,660	104,825	19,509	12,582	6,927	126
Dera Ismail Khān ‡	3,403	3	423	252,379	137,765	114,614	45,264	25,558	19,706	61
Shirāni Country	1,500	...	92	12,371	6,646	5,725	...	...	...	8
Total	16,466	20	3,348	2,125,480	1,159,306	966,174	269,905	170,269	99,636	113

NOTE.—Revised areas will be found in some of the District articles.

* The figures given are those of the troops in garrison, camp-followers, civil establishments, and bazar population at different posts. No enumeration of tribal population was attempted.

† Including Tochi valley.

‡ Including Wāna.

TABLE VI

Statistics of Agriculture, North-West Frontier Province

(In square miles)

	1887-8 to 1889-90 (average).	1890-1 to 1899-1900 (average).	1900-1.	1903-4.
Total area	12,441	12,821	13,231	13,279
Total uncultivated area	8,766	8,873	9,017	9,040
Cultivable, but not cultivated	3,316	3,534	3,401	2,981
Uncultivable	5,450	5,339	5,616	6,059
Total cultivated area	3,675	3,948	4,214	4,239
Irrigated from canals	544	660	673	814
" " wells and canals	1	6	5	3
" " wells	91	84	85	89
" " other sources	360	235	274	127
Total irrigated area	996	985	1,037	1,033
Unirrigated area, including area inundated	2,679	2,963	3,177	3,206
Principal Crops.				
Rice	49	49	49	51
Wheat	1,072	1,170	1,359	1,411
Other food-grains and pulses	1,638	1,628	1,893	1,805
Oilseeds	113	128	189	117
Sugar-cane	26	29	34	43
Cotton	61	65	55	48
Hemp	·260	·331	·481	·489
Other fibres	·035	·046	·023	·007
Poppy	·229	·089	·015	...
Indigo	·029	·020	·015	·003
Tobacco	5	8	12	10
Miscellaneous	76	111	135	186
Total area cropped	3,042	3,189	3,727	3,670
Area double-cropped	405	435	605	...

TABLE VII

TRADE OF THE NORTH-WEST FRONTIER PROVINCE WITH OTHER PROVINCES (INCLUDING THE PUNJAB) AND STATES IN INDIA

(In thousands of rupees)

Imports.	By rail.	By road (with Kashmir only).
	1903-4.	1903-4.
Horses, ponies, and mules	...	2
Cattle	...	71
Sheep and goats	...	2
Cotton, raw	39	...
,, twist and yarn	3,98	...
,, piece-goods	40,78	...
Charas	...	2
Dyes	...	...
Fruits	...	2,39
Ghī	...	13,77
Grain and pulses	6,53	8
Hides and skins	55	2,33
Metals and manufacture of metals	9,55	...
Oils	2,63	...
Oilseeds	38	36
Opium	5	...
Provisions	5,39	...
Salt	4	...
Spices	1,05	...
Sugar	4,99	...
Tea	6,30	...
Wood	48	...
Wool, raw	...	...
Woollen piece-goods and shawls	13	...
Other wool, manufactured	4,50	1,34
All other articles	56,17	8
Total	1,43,89	21,12
Treasure	7,86	...

TABLE VII A

Trade of the North-West Frontier Province with Countries outside India

(In thousands of rupees)

	1890-1.	1900-1.	1903-4.
	Including trade with Kābul through Dera Ghāzi Khān.	Excluding trade with Kābul through Dera Ghāzi Khān.	
Imports.			
Total (excluding treasure) .	37,32	62,51	65,81
Treasure	7	...	3,14
Total	37,39	62,51	68,95
Exports.			
Total (excluding treasure) .	63,27	1,02,38	1,09,93
Treasure	39	93	5,78
Total	63,66	1,03,31	1,15,71

TABLE VIII

Statistics of Criminal Justice, North-West Frontier Province

Particulars.	1901.	1904.	Percentage of convictions in 1904.
Number of persons tried :—			
(*a*) For offences against person and property . . .	13,912	11,074	24·1
(*b*) For other offences against the Indian Penal Code . .	3,825	3,070	39·0
(*c*) For offences against special and local laws . .	18,696	13,643	66·5
Total	36,433	27,787	46·6

TABLE IX

Statistics of Civil Justice, North-West Frontier Province

Particulars.	1901.	1904.
Suits for money and movable property . .	14,870	16,877
Title and other suits	4,644	4,198
Rent suits *	...	5
Other Revenue Court cases *	...	3,125
Total	19,514	24,205

* Figures for 1901 not available.

TABLE X

Revenue and Expenditure of the North-West Frontier Province

(In thousands of rupees)

	1902-3.	1903-4.
Revenue.		
Opening balance	1,42	1,38
Land revenue	16,71	17,74
Salt	6,84	6,74
Stamps	3,89	3,86
Excise	1,93	2,04
Provincial rates	3,45	2,40
Assessed taxes	1,14	1,00
Forests	1,01	1,02
Registration	31	30
Irrigation	6,96	6,86
Other sources	6,19	5,70
Total revenue	48,43	47,66
Expenditure.		
Charges in respect of collection (principally Land Revenue and Forest)	8,20	8,61
Salt	73	79
Salaries and expenses of Civil Departments :—		
General administration	2,45	2,59
Law and justice	5,83	5,83
Police	10,68	10,56
Education	80	89
Medical	1,11	1,10
Other heads	1,82	1,83
Pensions and miscellaneous charges	2,53	2,86
Irrigation	1,49	2,13
Public works	20,34	22,03*
Political	20,97	23,27†
Total expenditure	76,95	82,49
Closing balance	1,38	1,46

* Of the Rs. 22,03 expended on Public Works, 4·21 was the cost of buildings, the balance of communications. The most important buildings were the head-quarter offices (2·16 lakhs). Amongst communications the chief works were the Murtaza-Wānā road (3·63 lakhs), roads in the Khyber Agency (2·1 lakhs), the cart-road from Kohāt to Peshāwar (1·31), Kharmana Bridge (0·52), Dora Bridge (0·84 lakh).

† Of the Rs. 23,27,000 devoted to Political expenditure, nearly 15 lakhs is on account of the upkeep of Militia, Levy Corps (including the Chitrāl Scouts, but not the Border Military Police of the British Districts), 4 lakhs represents the cost of the five Political Agents and their establishments, while 3 lakhs is annually distributed as subsidies to Frontier tribes. The remainder is made up of miscellaneous items, such as rewards for intelligence, entertainment of envoys, allowances to refugees, secret service, &c.

TABLE XI

INCOME AND EXPENDITURE OF MUNICIPALITIES, NORTH-WEST FRONTIER PROVINCE

Particulars.	Average for ten years 1890-1 to 1899-1900.	1900-1.	1903-4.
Income.	Rs.	Rs.	Rs.
Octroi	2,82,592	3,40,151	3,65,966
Tax on houses and lands	1,360	1,467	1,437
Other taxes	3,271	2,024	3,663
Loans	14,173	...	...
Rents and other sources	91,044	1,10,033	1,27,453
Total income	3,92,440	4,53,675	4,98,519
Expenditure.			
Administration and collection of taxes	47,191	49,744	52,437
Public safety	69,791	76,797	92,156
Water-supply and drainage:—			
(*a*) Capital	34,247	11,212	25,048
(*b*) Maintenance	11,381	18,053	22,607
Conservancy	47,118	60,833	66,043
Hospitals and dispensaries	28,774	35,560	50,574
Public works	32,375	36,349	53,615
Education	38,978	49,893	56,515
Other heads	76,959	74,217	1,27,410
Total expenditure	3,86,814	4,12,658	5,46,405

TABLE XII

INCOME AND EXPENDITURE OF DISTRICT BOARDS, NORTH-WEST FRONTIER PROVINCE

Particulars.	North-West Frontier Province, including the District of Miānwāli in the Punjab.		North-West Frontier Province as now constituted.
	Average for ten years 1890-1 to 1899-1900.	1900-1.	1903-4.
	Rs.	Rs.	Rs.
Income from—			
Provincial rates	2,04,874	2,16,080	1,54,737
Interest	15	143	..
Education	1,955	4,701	3,833
Medical	1,937	2,601	2,243
Scientific, &c.	2,813	3,553	2,116
Miscellaneous	53,574	74,058	55,191
Public works	4,223	10,096	7,151
Cattle pounds	907	1,251	723
Total income	2,70,298	3,12,483	2,25,994
Expenditure on—			
Refunds	228	2	273
General administration	11,856	17,069	15,660
Education	51,213	60,767	53,610
Medical	34,242	40,195	30,967
Scientific, &c.	9,683	13,049	12,258
Miscellaneous	89,510	1,00,905	54,196
Public works	72,572	77,865	65,644
Total expenditure	2,69,304	3,09,852	2,32,608



J.G.Bartholomew.

TABLE XIII

POLICE STATISTICS, NORTH-WEST FRONTIER PROVINCE

	1902.	1903.
Provincial and Ferry Police.		
District and Assistant Superintendents*	12	12
Inspectors	8	8
Deputy-Inspectors	84	84
Sergeants	307	307
Constables†	1,993	1,993
Municipal Police.		
Inspectors	1	1
Deputy-Inspectors	5	6
Sergeants	44	43
Constables	450	450
Cantonment Police.		
Inspectors	1	1
Deputy-Inspectors	1	1
Sergeants	21	21
Constables	187	187
Military Police.		
Commandants and Sub-Commandants	5	5
Native officers	49	49
Non-commissioned officers and men	2,301	2,301
Rural Police.		
Chaukīdārs	..	2,519
Total expenditure on Police . . Rs.	3,61,765	10,68,020

* Includes officers of the Sāmāna Rifles. † Includes mounted constables.

TABLE XIV. COLLEGES, SCHOOLS, AND SCHOLARS, NORTH-WEST FRONTIER PROVINCE

Institutions.	1880-1.			1890-1.			1900-1.			1903-4.		
	Number of institutions.	Scholars.		Number of institutions.	Scholars.		Number of institutions.	Scholars.		Number of institutions.	Scholars.	
		Males.	Females.		Males.	Females.		Males.	Females.		Males.	Females.
Public.												
Arts college	...	...	...	...	...	...	1	6	1	1	17	...
Secondary schools:—												
High	} 10	} 1,888	} ...	5	1,130	...	12	2,648	...	11	2,899	...
Middle				15	1,594	...	16	1,969	...	14	2,179	...
Primary schools	69	2,709	95	108	5,631	106	152	6,948	251	180	8,275	605
Private.												
Advanced	43	322	...	...	...	...	86	1,433	...	103	1,771	...
Elementary	233	1,524	323	...	...	...	661	7,916	1,413	641	8,972	1,721
Total	355	6,443	418	128	8,355	106	928	20,920	1,665	950	24,113	2,326

TABLE XIV A. EDUCATION FINANCE, NORTH-WEST FRONTIER PROVINCE

	Direct expenditure on institutions maintained or aided by public funds from							
	Imperial revenues.		District and municipal funds.		Fees and other sources.		Total.	
	1900-1.	1903-4.	1900-1.	1903-4.	1900-1.	1903-4.	1900-1.	1903-4.
Arts college	...	...	...	...	...	952	...	952
Secondary schools	9,703	8,673	34,384	30,086	25,604	46,048	69,691	84,807
Primary schools	275	521	27,061	30,853	4,254	5,206	31,590	36,580
Girls' schools	85	239	1,362	1,746	...	664	1,447	2,649
Total	10,063	9,433	62,807	62,685	29,858	52,870	1,02,728	1,24,988

TABLE XV

MEDICAL STATISTICS, NORTH-WEST FRONTIER PROVINCE

	1881.	1891.	1901.*	1903.
Hospitals, &c.				
Number of civil hospitals and dispensaries	15	21	29	39
Average daily number of:—				
(*a*) In-patients	175	188	243	274
(*b*) Out-patients	965	1,445	2,431	2,795
Income from:—				
(*a*) Government payments Rs.	15,222	6,687	13,465	28,644
(*b*) Local and municipal payments Rs.	20,915	35,048	60,496	62,542
(*c*) Fees, endowments, and other sources Rs.	1,440	870	2,452	4,228
Expenditure on:—				
(*a*) Establishment Rs.	21,630	24,588	36,439	47,483
(*b*) Medicines, diet, buildings, &c. Rs.	15,423	18,017	39,724	46,362
Vaccination.				
Population among whom vaccination was carried on	Figures not available	1,835,557	1,928,487	2,072,326
Number of successful operations		54,862	52,262	82,576
Ratio per 1,000 of population		30	27	40
Total expenditure on vaccination Rs.		8,156	11,439	11,644
Cost per successful case Rs.		0-2-5	0-3-2	0-2-3

* Eight Government dispensaries situated in Political Agencies sent in no returns in 1901.

Nosāri.—*Prānt, tāluka*, and town in Baroda State. *See* NAVSĀRI.

Nova Goa.—Capital of Portuguese India. *See* GOA CITY.

Nowgong District (*Naogaon* = 'new village').—District in Eastern Bengal and Assam, lying between 25° 36′ and 26° 42′ N. and 91° 57′ and 93° 45′ E., with an area of 3,843 square miles. It is bounded on the north by the Brahmaputra; on the east by Sibsāgar; on the south by the Nāgā and North Cāchār Hills; and on the west by the Jaintiā Hills and Kāmrūp. The outlying spurs of the Jaintiā range project into the southern portion of the District, while on the north-east a portion of the MIKĪR HILLS, a tract of hilly country cut off from the main mass of the Assam Range by the valleys of the Dhansiri and Lāngpher, is included within the District boundaries. The rest of Nowgong is flat, though a few isolated hills crop up above the alluvium in the south and west, and a low range, known as the Kāmākhya hills, runs from the Brahmaputra to the north bank of the Kalang. The hills are, as a rule, rocky, with steeply sloping sides, and are covered with dense tree jungle, except where they have been cleared for shifting cultivation. The principal river is the BRAHMAPUTRA, which flows along the

Physical aspects.

northern boundary. A little to the east of Silghāt the KALANG leaves the parent stream, and, after pursuing a tortuous course through the centre of the District, rejoins the Brahmaputra on the border of Kāmrūp. The Diphlu falls into the Brahmaputra east of Silghāt, and the country north of the Kalang is drained by the Sonai. The other rivers fall into the Kalang, the most important being the KAPILI, with its tributaries the Doiāng, Jamunā, Barpāni, and UMIĀM or Kiling. The District is well supplied with streams and rivers, and there are numerous *bīls* and swamps. None of these is of any great importance, and many are merely the old beds of rivers that have altered their channels. Along a great part of its course the banks of the Kalang are fringed with a continuous line of villages, buried in groves of bamboo and the graceful areca palm. Elsewhere the scenery is wild, but not unpleasing. To the south and east blue forest-clad hills shut in the view, while on a clear day the snowy ranges of the Himālayas can be seen north of the Brahmaputra. A considerable portion of Nowgong lies too low for permanent habitation or cultivation. A large tract south of the Brahmaputra is covered with high grass, in which patches are cleared for cold-season crops; and there are great expanses of jungle-covered land in the valley of the Kapili and along the foot of the hills. Nowgong is, in fact, the most sparsely-peopled and jungly District in the whole of the Assam Valley.

The soil of the plain is an alluvium, consisting of a mixture of clay and sand in varying proportions. The northern Mīkīr Hills are mainly of gneiss, which towards the south is overlain by sedimentary strata of the Tertiary period. These younger rocks consist of soft yellow sandstones, finely laminated grey shales, and nodular earthy limestones.

Where not under cultivation, the plains usually bear high grass or reeds, of which there are three main varieties—*khagari* (*Saccharum spontaneum*), *ikra* (*Saccharum arundinaceum*), and *nal* (*Phragmites Roxburghii*). Higher land produces *ulu* (*Imperata arundinacea*) and other kinds of shorter grass used for thatching. The hills are covered with evergreen forest, and patches of *sāl* (*Shorea robusta*) are found here and there.

Wild animals are numerous, including elephants, rhinoceros, buffalo, bison, tigers, leopards, bears, and various kinds of deer. Elephants, if their numbers are not kept down, cause injury to the crops. In 1904 wild animals were said to have killed 8 men and 1,246 head of cattle. Rewards were paid in that year for the destruction of 38 tigers and leopards. Small game include florican, partridges, pheasants, pea- and jungle-fowl, hares, wild duck, and snipe.

The climate does not differ materially from that of the other Districts in the Assam Valley. Between November and the middle of March it

is cool and pleasant, and during the rest of the year warm and damp. The thermometer at the hottest season seldom rises much above 90°, but the air is overcharged with moisture and is therefore oppressive. The District, and more especially the part lying at the foot of the hills, has always been considered unhealthy; and this reputation has been well sustained of recent years.

Nowgong is to some extent sheltered from the monsoon by the Assam Range, and the annual rainfall over the greater part of the District averages from 70 to 80 inches in the year. The Kapili valley is exceptionally dry, and only receives about 40 inches. The earthquake of 1897 did much damage in Nowgong town, and injured roads and bridges throughout the District.

History.

Nowgong has no independent history apart from that of the Assam Valley. Jangal, a Hindu king of Kāmarūpa, is said to have made his capital near Rahā in the thirteenth century A.D.; and several places, such as Rahā, Jāgi, and Kajalimukh, take their names from incidents which are supposed to have occurred when this prince was defeated and killed by the Kāchāri Rājā. The Kāchāris at one time occupied a considerable portion of the District, but in 1536 they were defeated by the Ahoms and their capital at Dimāpur sacked. From this time the Kalang seems to have been their northern boundary, while north of that river the Ahoms were the dominant power. On the break up of the Ahom kingdom, the District was exposed to the ravages of the Burmans, who in 1820 decapitated 50 men on the banks of the Kalang and burned alive 200 persons, young and old, men and women together. After the British took possession of the country in 1826, Nowgong was at first administered as a portion of Kāmrūp, but in 1832 was formed into an integral revenue unit. The eastern boundary was at that time the Dhansiri, and it included the Mīkīr Hills and part of the North Cāchār and Nāgā Hills. The Nāgā Hills and a large part of the Mīkīr Hills were formed into a separate District in 1866; but a considerable portion of the Mīkīr Hills was subsequently retransferred to Nowgong, which took its present form in 1898. Under British rule the course of affairs has been uneventful. On one occasion, however, the aboriginal tribes broke out; when the cultivation of poppy was prohibited in 1861 the Lalungs killed the Assistant Commissioner, Lieutenant Singer, who had been sent to disperse a meeting of that tribe at Phulaguri, about 9 miles south of Nowgong town. The District contains few objects of archaeological interest. There is a Hindu temple at Kāmākhya, near Silghāt, which dates from the middle of the eighteenth century; and ruins of temples and forts have been found in the Kapili valley, which were probably erected in the time of the Kāchāri Rājās.

The District contains one town, NOWGONG (population, 4,430), its

head-quarters; and 1,117 villages. The population at the last four enumerations was: (1872) 260,238, (1881) 314,893, (1891) 347,307, and (1901) 261,160, the density in the last year being only 68 persons per square mile. The enormous decrease that took place during the last decade, amounting to about 30 per cent. among the indigenous population, and nearly 25 per cent. in the total, was chiefly due to the ravages of *kalā azār*, a very acute and contagious form of malarial poisoning.

Population.

About 64 per cent. of the population in 1901 were Hindus, 31 per cent. belonged to animistic tribes, and 5 per cent. were Muhammadans. The proportion of foreigners (11 per cent.) is comparatively low for Assam. One of the effects of the exceptional unhealthiness in recent years has been to increase the proportion of women, who among the indigenous population now exceed the men in numbers. Assamese is spoken by 66 per cent. of the people, while 20 per cent. speak Mīkīr and other languages of the Tibeto-Burman family.

The proportion of higher castes is fairly large, including Brāhmans (6,100), Kalitās (16,300), and Kewats (13,300). The Koch, who are largely composed of converts from the aboriginal tribes, number 33,600. The principal lower castes are Nadiyāls or fishermen (18,900) and Jugis (15,000). The Boriās (7,800), a caste peculiar to Assam, are composed of the offspring of Brāhman widows and other alliances contracted outside the pale of customary law. The chief aboriginal tribes are Mīkīrs (35,700), Lalungs (29,000), and Kāchāris (11,800), all of whom are members of the great Bodo family, and are believed to have entered Assam from the north-east many centuries ago. Only 93 members of European and allied races were enumerated in the District in 1901. Agriculture is the staple occupation, and was returned by 90 per cent. of the people at the last Census, a proportion which is high even for Assam.

The American Baptists have for many years had a mission in Nowgong town, and the native Christians (496) are members of this sect.

The soil of the plains consists of clay and sand mixed in varying proportions, but the character of the harvest depends more upon the rainfall and the level of the fields than upon the quality of soil on which it is grown. The plains are much exposed to injury from flood. A sudden rise of the Kapili or Kalang and their tributaries is liable to destroy the rice crop, and cultivation in the neighbourhood of the Brahmaputra is largely affected by the action of that river. If the waters rise too early, the summer rice suffers; and if they remain late into the autumn, the ground is left too damp and cold for mustard.

Agriculture, &c.

In 1903-4 the unsettled area was 3,417 square miles, including 142

square miles of 'reserved' forest; and 348 square miles were cultivated, out of a total settled area of 426 square miles. Rice is the staple crop, and in 1903-4 covered 245 square miles, or 61 per cent. of the total cropped area. It is divided into three main classes: *sāli*, or transplanted winter rice, which is grown on land that is low enough to retain moisture, but high enough to be free from risk of flood; *āhu*, or snmmer rice, which is for the most part sown on the *chaparis* near the Brahmaputra, and to be successful must be cut before the river rises; and *bao*, a long-stemmed variety grown in marshy tracts. Thirty per cent. of the rice area is usually under *āhu*, 19 per cent. under *bao*, and 51 per cent. under *sāli*, which gives a larger out-turn than the other two classes, but requires a greater expenditure of labour. In 1903-4 mustard and pulse, which are grown in conjunction with *āhu*, covered 47,000 and 15,000 acres respectively. Other crops are tea, sugar-cane, *til*, and cotton, which last is raised by the Mīkīrs in the hills.

The tea plant was first introduced into Nowgong about 1854; but the soil and climate have not proved as suitable as in Upper Assam, and the industry has suffered from the unhealthiness of the past decade. In 1904 there were 43 gardens with 11,857 acres under plant, which yielded more than 4½ million lb. of manufactured tea and gave employment to 23 Europeans and 12,461 natives, nearly all of whom had been imported from other parts of India. The largest concern is the Sālanā Tea Company, with head-quarters at Sālanā.

The decrease in population was accompanied by a decrease in the area settled at full rates, which shrank by 26 per cent. between 1891 and 1901. Since that date there has, however, been a slight extension of cultivation. Little or no attempt has been made to improve the existing staples by the selection of seed or to introduce new varieties. Agricultural loans were first made in 1902, and since that date a few hundred rupees have been distributed.

The farm cattle, as in the rest of Assam, are poor and undeveloped, in spite of the abundance of excellent grazing ground; but the buffaloes of the District are fine animals. There is no indigenous breed of sheep or ponies.

Irrigation is practised only in the submontane tracts, where water is occasionally diverted from the hill streams by means of artificial channels. In the plains, the problem for solution is rather the protection of the fields from flood than the introduction of more water. Prior to the earthquake of 1897 there were raised roads along the banks of several of the rivers, which served the purpose of flood embankments. The most important were the road running along the right bank of the Kalang from Kaliābar to Rahā, that along the left bank of the Rupahi, and that along the right banks of the Kapili and Jamunā from Rahā to Dabakā. These dikes were breached or

destroyed by the earthquake, and since that date considerable damage has been done by flood.

There are ten 'reserved' forests in Nowgong, covering an area of 142 square miles. Most of these forests contain *sāl* (*Shorea robusta*); but the largest trees in the more accessible portions have been worked out, and though there is excellent timber in the Diju, Kukrakātā, and Rangkhang Reserves, the difficulties of transport are considerable. The area of unclassed state forest was 3,436 square miles in 1903-4, but this includes large stretches of land covered with grass and reeds and practically destitute of timber. The most valuable trees are *poma* (*Cedrela Toona*), *gomari* (*Gmelina arborea*), *gunserai* (*Cinnamomum glanduliferum*), *sam* (*Artocarpus Chaplasha*), from which canoes or dug-outs are hollowed out, and *sāl* and *sonaru* (*Cassia Fistula*), which are used for posts. The amount of timber exported from the District is small; and though cane is plentiful, there is very little trade in this product. Rubber is extracted in small quantities.

No minerals are worked; but iron ore is found in the Mīkīr Hills, and limestone in the beds of the Deopāni, Hariājān, and Jamunā rivers. Coal has also been found on Langlei hill, about 12 miles from Lumding.

Trade and communications.

Apart from tea, the manufactures of Nowgong are of small importance, and are usually practised as home industries, subsidiary to the main occupation, which is agriculture. They include the weaving of silk and cotton cloth, rough jeweller's work, basket- and mat-making, and the manufacture of coarse pottery and of various utensils from brass, bell-metal, and iron. A speciality of the District is the *jhapi*, or broad-brimmed hat, which is made of leaves and artistically ornamented with coloured cloth.

The lac insect is reared by the hill tribes, and lac is exported in considerable quantities. Wholesale trade is almost entirely in the hands of Mārwāri merchants from Rājputāna, known as Kayahs. The principal exports are tea, mustard seed, raw cotton, lac, bamboo mats, and hides; the imports include rice, gram and other grain, sugar, salt, kerosene and other oils, opium, *ghī*, cotton twist and piece-goods, and hardware. The principal centres of trade are at Nowgong, Rahā, and Chāparmukh, where there is a considerable business in cotton and lac; but the total is not of very great importance. Weekly markets are held for the disposal of local produce, the most important of which are those at Sālanā and Jāluguti. A considerable proportion of the trade of the District leaves it by water. Country boats come up the Kalang and take away the mustard grown in the neighbourhood, while Silghāt on the Brahmaputra is an outlet for the country to the north and east. The trade of the hills comes down the Kapili and its tributaries, and passes by the Kalang to the Brahmaputra; but of recent

years a considerable portion has been dispatched from Chāparmukh by rail to Gauhāti.

The Assam-Bengal Railway enters the west of the District near Jāgi Road, and after passing 14 miles south of Nowgong town, runs up the Kapili valley to Dimāpur, where it enters Sibsāgar. Lumding, 43 miles west of Dimāpur, is the junction for the main line which pierces the North Cāchār Hills and runs along the Surmā valley to Chittagong. In 1903–4, 154 miles of unmetalled roads were maintained by the Public Works department, and 192 miles of unmetalled roads by the local board. The most important road is the trunk road, which enters the District near Nakholā, passes through Rahā, Nowgong, and Kaliābar, and then runs along the north of the Mīkīr Hills into Sibsāgar. The road from Kāmpur via Sālanā to Silghāt also carries a considerable quantity of traffic. Timber bridges have been constructed over the minor streams, but the larger rivers, such as the Kalang and Umiām, are crossed by ferries. Daily passenger steamers and large cargo boats, owned by the India General Steam Navigation Company and the Rivers Steam Navigation Company, ply on the Brahmaputra and call at the port of Silghāt; and in the rains feeder steamers go down the Kalang as far as Nowgong. Except in the west the District is fairly well provided with means of communication, but during the rains roads carrying heavy traffic are much cut up.

Nowgong, like the rest of Assam, has never experienced famine. In 1896 and 1900 the rainfall was insufficient and the rice crop suffered from drought, but no measures of relief were necessary. Floods often do damage, but their effects are only local.

Administration.

The District contains no subdivisions, and is administered by the Deputy-Commissioner, who usually has two Assistants. Public works are in charge of the Executive Engineer stationed at Tezpur, and the Forest officer is generally a native.

The Deputy-Commissioner exercises the powers of a Sub-Judge, and his Assistants have jurisdiction as Munsifs. Appeals, both civil and criminal, lie to the Judge of the Assam Valley at Gauhāti, but the chief appellate authority is the High Court at Calcutta. Special rules for the administration of the criminal law have been prescribed for the Mīkīr Hills, where the Code of Criminal Procedure is not in force, the jurisdiction of the High Court is barred, and the Deputy-Commissioner exercises the powers of life and death, subject to confirmation by the Chief Commissioner. The Assamese are a peaceful and law-abiding people, and there is little serious crime.

The land revenue system resembles that in force in the rest of Assam proper, which is described in the article on ASSAM. The settlement is *ryotwāri*, engagements being made direct with the actual cultivators of the soil, and is liable to periodical revision. The District

contains a large area of waste land, and the settled area of 1903-4 was only 11 per cent. of the total area, which includes, however, rivers, swamps, and hills. Mustard and summer rice are seldom grown on the same land for more than three years in succession, and the villagers are allowed to resign their holdings and take up new plots of land on giving notice to the revenue authorities. In 1903-4 more than 21,000 acres of land were so resigned and nearly 30,000 acres of new land taken up. Fresh leases are issued every year for this shifting cultivation, and a large staff of *mandals* is maintained to measure new land, test applications for relinquishment, and keep the record up to date. Like the rest of the Assam Valley, Nowgong was last resettled in 1893 for a period of ten years; but in 1901 the assessment was reduced by a lakh, as *kalā azār* had not only killed a very large proportion of the population, but had left the survivors despondent and apathetic. The average assessment per settled acre assessed at full rates in 1903-4 was Rs. 2-1-6 (maximum Rs. 4-2 and minimum Rs. 1-11). In the hills a tax is levied of Rs. 2 a house, irrespective of the area under actual cultivation.

The revenue from land and the total revenue, in thousands of rupees, are shown in the following table:—

	1880-1.	1890-1.	1900-1.	1903-4.
Revenue from land	4,32	5,03	5,61	4,77
Total revenue	9,02*	10,09	10,34	9,88

* Exclusive of forest receipts.

Outside the municipality of Nowgong, local affairs are managed by a board presided over by the Deputy-Commissioner. The presence of a strong European element on this board imparts to it an exceptional degree of vitality. The expenditure in 1903-4 amounted to Rs. 49,300, rather more than one-third of which was devoted to public works. The principal sources of income are local rates and a substantial grant from the Provincial revenues.

For the purposes of the prevention and detection of crime the District is divided into eight investigating centres, and the civil police force consisted in 1904 of 24 officers and 166 men. There are no rural police, their duties being discharged by the village headmen. The jail at Nowgong has accommodation for 77 prisoners; female convicts are sent to Tezpur.

Education has not made much progress. Between 1874-5 and 1903-4 the number of pupils increased by only 46 per cent., as compared with 223 per cent. in the plains Districts as a whole. The number of pupils under instruction in 1880-1, 1890-1, 1900-1, and 1903-4 was 3,844, 5,696, 4,501, and 4,456 respectively. At the

Census of 1901, 2·8 per cent. of the population (5·4 males and 0·1 females) were returned as literate. There were 121 primary and 6 secondary schools in the District in 1903–4. The number of female scholars was 110. The great majority of the pupils under instruction were in primary classes, and no girl had advanced beyond that stage. Of the male population of school-going age 19 per cent. were in the primary stage of instruction, and of the female population of the same age less than one per cent. The total expenditure on education in 1903–4 was Rs. 45,000, of which Rs. 6,000 was derived from fees; 34 per cent. of the direct expenditure was devoted to primary schools.

In proportion to its population, the District contains a comparatively large number of dispensaries and hospitals, some of which were opened in the hope of their being able to check the progress of the epidemics from which Nowgong has recently been suffering. In 1904 there were one of the latter class, and nine of the former, with accommodation for 38 in-patients. In that year the number of cases treated was 98,000, of which 200 were in-patients, and 1,100 operations were performed. The expenditure was Rs. 24,000.

The advantages of vaccination are not so much appreciated here as elsewhere, and in 1903–4 only 31 per 1,000 of the population were protected, which is 13 per 1,000 below the mean of Assam as a whole. Nowgong town is the only place in which vaccination is compulsory.

[Sir W. W. Hunter, *A Statistical Account of Assam*, vol. i (1879); B. C. Allen, *District Gazetteer of Nowgong* (1906).]

Nowgong Town (1).—Head-quarters of the District of the same name in Eastern Bengal and Assam, situated in 26° 20′ N. and 92° 41′ E., on the left bank of the Kalang river. Though the Magistrate's court was transferred to this place from Rangāgarā nearly seventy years ago, it has made but little progress, and the population in 1901 was only 4,430. The earthquake of 1897 did serious damage to Nowgong. Most of the masonry buildings were shaken down, and the level of a neighbouring swamp was raised, with the result that parts of the town lie under water for days together during the rains. The public buildings stand near the bank of the river on a park-like lawn dotted over with fine trees; but the site, though picturesque, is hot, and generally thought unhealthy. The town contains a jail with accommodation for 77 male prisoners, a dispensary with 38 beds, and a branch of the American Baptist Mission. It is connected by road with the river port of Silghāt (32 miles away), and with the railway at Chāparmukh (17 miles). In 1894–5 Nowgong was formed into a municipality, and during the next nine years the municipal receipts and expenditure averaged Rs. 10,700. In 1903–4 the income was Rs. 10,900, including fees from pounds (Rs. 1,600), and a grant from Provincial revenues

(Rs. 5,000), while the expenditure was Rs. 10,800. The water-supply is obtained from excellent masonry wells. The trade of the town is in the hands of Mārwāri merchants. The principal articles of export are mustard, cotton, and lac; and the chief imports are salt, oil, cotton cloth, and grain. No troops are stationed in the town, but 27 members of the Assam Valley Light Horse are resident in the District. The chief educational institution is a high school, which in 1903-4 had an average attendance of 198 boys.

Nowgong Town (*Naugaon*) (2).—Combined civil station and cantonment in the Chhatarpur State, Central India, being the head-quarters of the Political Agent in Bundelkhand, and a station for British and Native troops. It is also the head-quarters of a division of the Central India Public Works department. It is situated in 25° 4′ N. and 79° 27′ E., 19 miles by road from the Harpālpur station of the Jhānsi-Mānikpur section of the Great Indian Peninsula Railway, and is connected by a good metalled road with Satnā via Chhatarpur and Pannā, also, by a road crossing this at Chhatarpur, with Mahobā and Bāndā, and with Saugor. Population (1901), 11,507. The cantonment was formed in 1843, when Kaitha in Hamīrpur District was given up. It was enlarged in 1869, more land being acquired from the Chhatarpur State. In 1874 Piprī village and surrounding land were acquired to form the civil limits, which included the Agency and Rājkumār College (since abolished). In 1857 the garrison consisted of a wing of the 12th Madras Infantry, a wing of the 14th Irregular Cavalry, and 6 guns of No. 9 Native Battery. The troops mutinied on July 10, but did not injure the Europeans, who were allowed to proceed to Bāndā. The garrison in 1905 included a brigade of two heavy batteries, two companies of British infantry, and one regiment each of Native cavalry and infantry. The cantonment magistrate exercises jurisdiction as District Magistrate (including cases arising on the railway), District Judge, and judge of a Small Cause Court, and is also *ex-officio* Assistant Political Agent. Appeals lie to the Political Agent, who is a Sessions Judge. The station is policed by a force of Central India Agency police, consisting of 36 constables under an inspector, and contains a District jail, a civil dispensary, a hospital, and a school. The cantonment income, derived from octroi, house tax, and conservancy tax, amounts to about Rs. 32,000 a year, and the expenses of administration to about Rs. 28,000. The place has little trade, except that connected with the supply of the troops.

Nowrangapur.—Northernmost *tahsīl* in the Agency tract of Vizagapatam District, Madras, stretching up into the Central Provinces and Bengal, between the States of Bastar and Kālāhandī. It is open, and is watered by the tributaries of the Tel and Indrāvati. Much fine forest still exists and the valleys are highly cultivated. The area is

2,172 square miles; and the population in 1901 was 104,145 (chiefly Khonds and other hill tribes), compared with 116,399 in 1891. They live in 1,031 villages. The head-quarters of the *tahsīl* are at Nowrangapur village, where the Rānī of Nowrangapur, a connexion of the Jeypore family, resides. Considerable traffic passes through this *tahsīl* between Jeypore and the neighbouring States of the Central Provinces and Bengal.

Nowshera.—*Tahsīl*, cantonment and town in Peshāwar District, North-West Frontier Province. *See* NAUSHAHRA.

Nuddea.—District and town in Bengal. *See* NADIĀ and NABADWĪP.

Nūh (*Noh*).—*Tahsīl* of Gurgaon District, Punjab, lying between 27° 53′ and 28° 20′ N. and 76° 51′ and 77° 19′ E., with an area of 403 square miles. It is bounded on the west by the State of Alwar. The population in 1901 was 145,931, compared with 131,593 in 1891. It contains the village of Nūh, the head-quarters, and the town of Hattīn (4,301), with 257 villages. The land revenue and cesses in 1903–4 amounted to 2·9 lakhs. Of the *parganas* which make up the greater part of the present *tahsīl*, Nūh was brought under British rule in 1808, Hattīn in 1823, and Taoru (which had been assigned to Bharatpur) after the Bharatpur War in 1826. The high plateau of Taoru is separated from the low-lying tract round Nūh by a low range of hills. To the east the country is undulating and water collects in the hollows.

Nujikal.—River in the west of Coorg, Southern India, which drains the Sampaji valley. At Sulya it receives a tributary from the Todikana pass and Tale-Kāveri, and under the name of the Basavani falls into the sea near Kāsaragod, in the South Kanara District of Madras.

Nundy.—Village in Kolār District, Mysore. *See* NANDI.

Nundydroog.—Hill in Kolār District, Mysore. *See* NANDIDROOG.

Nunke Bhairava.—A bare rocky hill, 3,022 feet high, in the north-east of Chitaldroog District, Mysore, situated in 14° 44′ N. and 76° 47′ E. The Kadambas had a fort here called Lunkeya-kote. In a remarkable enclosed ravine on this hill, with no visible outlet at either end, is an ancient temple of Nunke Bhairava or Lunkesvara, built by a Kadamba prince in the tenth century. It is served by a succession of Gosains from Northern India.

Nūrmahal.—Town in the Phillaur *tahsīl* of Jullundur District, Punjab, situated in 31° 6′ N. and 75° 36′ E. Population (1901), 8,706. It lay on the old imperial road from Delhi to Lahore and was refounded by Nūr Jahān, wife of Jahāngīr. A large *sarai* was built by her orders, the west gateway of which is still in good preservation. The town has some manufacture of *gabrūn* cloth. The municipality was created in 1867. The income and expenditure during the ten years ending 1902–3 averaged Rs. 6,300. In 1903–4 the income was Rs. 6,100, chiefly

from octroi; and the expenditure was Rs. 5,900. The town possesses a vernacular middle school, maintained by the municipality, and a Government dispensary.

Nūrpur Tahsīl.—*Tahsīl* of Kāngra District, Punjab, lying between 31° 58′ and 32° 24′ N. and 75° 37′ and 76° 9′ E., with an area of 525 square miles. It consists of a confused mass of hills, mostly forest-clad, and is bounded on the north-east by the Dhaola Dhār range which divides it from Chamba. The population in 1901 was 102,289, compared with 104,895 in 1891. The town of NŪRPUR (population, 4,462) is the head-quarters, and there are 191 villages. The land revenue and cesses in 1903-4 amounted to 1·6 lakhs.

Nūrpur Town.—Head-quarters of the *tahsīl* of the same name in Kāngra District, Punjab, situated in 32° 18′ N. and 75° 55′ E., 37 miles west of Dharmsāla on the road to Pathānkot, on the western side of a hill which rises sharply from the plain. Population (1901), 4,462. Nūrpur was anciently called Dhameri (or Temmery by the old travellers), and was renamed Nūrpur in honour of the emperor Nūr-ud-dīn Jahāngīr. The fort, begun by one of the local Rājās, was finished in the time of Aurangzeb. It contains a curious wooden temple, and excavations made in 1886 revealed the existence of a stone temple of much earlier date than the fort. The carvings on the temple are of a kind unknown elsewhere in the Province. The Rājās of Nūrpur are known to Muhammadan historians as the *zamīndārs* of Mau and Paithān, and Nūrpur became their capital after the destruction of Mau by Shāh Jahān. They were loyal feudatories of the Mughal empire, and stoutly defended their territory against the Sikhs. Ranjīt Singh finally reduced Nūrpur in 1815.

The principal inhabitants are Rājputs, Kashmīris, and Khattrīs, the last being descendants of fugitives from Lahore, who fled from the exactions of the later Muhammadan rulers. The Kashmīris settled in Nūrpur in 1783, driven from their country by famine, and were reinforced by others from a like cause in 1833. They carried with them the national manufacture of their native valley, that of shawls of *pashmīna* wool, and made the town famous for the production of these and other woollen cloths. Owing to the collapse in the shawl trade which followed the Franco-Prussian War, the trade has dwindled, and is now confined to the manufacture on a small scale of shawls and woollen fabrics of an inferior description. Nūrpur was for long the chief town of the District, in both size and commercial importance; but owing to the decay of its chief industry, shawl-weaving, it is now much reduced, though still a centre of local trade. The municipality was created in 1867. The income and expenditure during the ten years ending 1902-3 averaged Rs. 10,200. In 1903-4 the income was Rs. 9,700, chiefly derived from octroi; and the expenditure was Rs. 11,300. The town

possesses a Government dispensary, and the municipality maintains an Anglo-vernacular middle school.

Nūrpur Mine.—Salt-mine in the Pind Dādan Khān *tahsīl* of Jhelum District, Punjab, situated in 32° 39′ N. and 72° 38′ E., in the Nilawāhan gorge, about 3½ miles south-east of the village of Nūrpur. It supplies only the local demand. In 1903–4, 4,000 maunds of salt were sold. The mine is an old one, worked during Sikh rule, but closed after annexation and subsequently reopened.

Nursingarh.—State in Central India. *See* NARSINGHGARH.

Nurwar.—*Zila* and town in Gwalior State, Central India. *See* NARWAR.

Nuseerābād.—Town in Mymensingh District, Eastern Bengal and Assam. *See* NASĪRĀBĀD TOWN (2).

Nushki Tahsīl.—The most easterly *tahsīl* of Chāgai District, Baluchistān, lying between 29° 2′ and 29° 54′ N. and 65° 13′ and 66° 25′ E., at an elevation of about 3,000 feet. The area is 2,202 square miles, and the population (1901) 10,756. The eastern portion is hilly; the remainder consists of a level plain, with sand-hills on the north and in the centre. The great stretch of alluvial plain, known as the *dāk*, is very fertile when irrigated, but the absence of cultivators and of drinking-water presents much difficulty. The number of permanent villages is ten. Most of them are situated under the hills on the east. NUSHKI TOWN (population, 644) is the head-quarters, from which the *tahsīl* gets its name. The revenue in 1903–4 amounted to Rs. 10,700.

Nushki Town.—Head-quarters of Chāgai District, Baluchistān, and terminus of the Seistān trade route, situated in 29° 34′ N. and 66° 0′ E., at an elevation of 2,900 feet above the sea, 91 miles from Quetta, with which it was connected by railway in 1905. Population (1901), 644. It came into existence in 1899, when the Nushki *niābat* was taken over from the Khān of Kalāt; and a bazar of some fifty shops and buildings for the *tahsīl*, police, and levy establishments quickly sprang up. The place is, however, inconveniently situated, as the water-supply from the Kaisār stream is liable to dry up almost completely in summer. A house and shop tax is levied, and the proceeds are used in maintaining sanitary establishments. The income of this fund in 1903–4 was Rs. 1,800 and the expenditure Rs. 1,300. Trade from Nushki is carried on with Khārān, with Garmsel and Shorāwak in Afghānistān, and with Jālk and Seistān in Persia.

Nūzvīd Tāluk.—*Tāluk* in Kistna District, Madras, lying between 16° 13′ and 17° 4′ N. and 80° 39′ and 81° 3′ E., with an area of 789 square miles. The whole of it was originally a single *zamīndāri* estate, which by a decree of the Privy Council was divided into eight portions. The population in 1901 was 188,761, compared with 153,628 in 1891. The demand on account of land revenue and cesses in 1903–4 amounted

to Rs. 5,72,000. The head-quarters are at Gannavaram, and there are 230 other villages, besides the town of NŪZVĪD (population, 9,015). The Ellore canal cuts the *tāluk* into two divisions, the eastern being composed chiefly of deltaic lands, and the western traversed by low hills and jungle. There is some irrigation from tanks, and the *tāluk* contains the largest of these sources in the District, the Brahmayyalingam lake.

Nūzvīd Town.—Head-quarters of the *tāluk* and *zamīndāri* of the same name in Kistna District, Madras, situated in 16° 48′ N. and 80° 52′ E., on rising ground about 24 miles north-east of Bezwāda. Population (1901), 9,015. Around it are large tracts of jungle, formerly its chief defence. It contains a mud fort still inhabited by the *zamīndārs*. Its chief features are large groves of coco-nut palms and mango-trees.

Nyāmti.—Town in the Honnāli *tāluk* of Shimoga District, Mysore, situated in 14° 9′ N. and 75° 35′ E., 21 miles north of Shimoga town. Population (1901), 3,461. The original name was Nematti. In 1245 and 1247 severe fighting took place here between the Hoysalas and Seunas. In 1314 it was an *agrahāra* under the former. In 1396, under Vijayanagar supremacy, it was subject to the governor at Goa, who had charge of the Kadamba kingdom. The modern town seems to have been established by the Dīwān Pūrnaiya at the beginning of the nineteenth century. The merchants are all Lingāyats, and a considerable trade is carried on in exchanging the products of the Malnād for those of the Maidān. Much money was made here in the cotton trade during the American Civil War. The municipality dates from 1870. The receipts and expenditure during the ten years ending 1901 averaged Rs. 2,700 and Rs. 3,100. In 1903–4 they were Rs. 2,200 and Rs. 2,500.

Nyaungdon.—Township and town in Ma-ubin District, Lower Burma. *See* YANDOON.

Nyaunglebin Subdivision.—Subdivision of Pegu District, Lower Burma, consisting of the PYUNTAZĀ and NYAUNGLEBIN townships, divided in 1899–1900.

Nyaunglebin Township.—Northern township of Pegu District, Lower Burma, lying between 17° 53′ and 18° 25′ N. and 95° 57′ and 96° 52′ E., with an area of 380 square miles. The population increased from 39,447 in 1891 to 64,712 in 1901. The head-quarters are at NYAUNGLEBIN TOWN (population, 7,627), on the railway. The western portion consists of hills and forests; but so thick is the population in the neighbourhood of the railway, which passes up the eastern plain land, that the average density is 170 persons per square mile. The number of villages is 261. The area cultivated in 1903–4 was 188 square miles, paying Rs. 2,22,400 land revenue.

Nyaunglebin Town.—Head-quarters of the Nyaunglebin sub-

division and township, in Pegu District, Lower Burma, situated in 17° 57′ N. and 96° 45′ E., in flat rich country near the north-eastern border of the District, on the Rangoon-Mandalay railway, 46 miles from Pegu and 93 from Rangoon. The town, which is an important centre of the paddy trade, had a population of 7,627 in 1901. It was constituted a 'notified area' in 1902, and placed in charge of a town committee. The income of the town fund in 1903-4 was Rs. 25,500. The hospital has 16 beds, and is supported chiefly from the town fund.

Nyaungu.—Town in Myingyan District, Upper Burma. *See* PAGAN VILLAGE.

Nyaungywe.—State in the Southern Shan States, Burma. *See* YAWNGHWE.

Nyehattee.—Town in the District of the Twenty-four Parganas, Bengal. *See* NAIHĀTI.

Od.—Town in the Anand *tāluka* of Kaira District, Bombay, situated in 22° 37′ N. and 73° 7′ E. Population (1901), 6,072. It has been a municipality since 1889. The income during the decade ending 1901 averaged Rs. 5,000. In 1903-4 the income was Rs. 4,980. The town contains three vernacular schools, two for boys and one for girls, attended by 262 and 51 pupils respectively.

Odalguri.—Site of a fair in Darrang District, Eastern Bengal and Assam. *See* UDALGURI.

Oghi (*Ughi*).—Chief place in the Agror valley, Hazāra District, North-West Frontier Province, and head-quarters of the Hazāra border military police. There is a Government dispensary.

Ohind.—Ancient site in tribal territory, North-West Frontier Province. *See* UND.

Ojein.—*Zila* and town in Gwalior State, Central India. *See* UJJAIN.

Okhāmandal.—*Tāluka* of the Amreli *prānt*, Baroda State, forming the most western portion of Baroda territory as well as of Kāthiāwār, and lying between 22° 5′ and 22° 35′ N. and 69° 5′ and 69° 20′ E., with an area of 268 square miles. The population in 1901 was 22,689, compared with 22,280 in 1891. Okhāmandal came under the full sovereignty of the Gaikwār in 1817; but the Wāghers, who are the aboriginal inhabitants, have often risen in rebellion, and have had to be subjugated repeatedly by both British and Baroda forces. It contains one town, DWĀRKA (population, 7,535), and 43 villages. The aspect of the country is a dull and generally undiversified verdureless plain. In the northern part the soil is light red, alternating with a fairly rich black mould. Along the coast it is sandy, but inland it is fairly productive. In the southern portion the soil is also light red, but in many places it is rocky and barren. The staple crops are

bājra, *tal*, and *jowār*; and the rainfall is so scanty as a general rule that the tract may be said to suffer from chronic drought. Salt is procurable in large quantity, but its export is restricted by the rules of the Government of India. In 1904–5 the land revenue was Rs. 36,000.

Okpo.—Township of Henzada District, Lower Burma, lying between 17° 38′ and 18° 2′ N. and 94° 53′ and 95° 31′ E., with an area of 694 square miles. It occupies the centre of the District, extending from the Irrawaddy to the Arakan Yoma. The population increased from 73,686 in 1891 to 84,046 in 1901, though that of the head-quarters, Okpo, fell during the decade from 10,894 to 3,762, and it is no longer administered by a town committee. There are 436 villages. The area cultivated in 1903–4 was 136 square miles, paying Rs. 1,82,000 land revenue.

Oktwin.—Township in Toungoo District, Lower Burma, constituted in 1905 from a portion of the PYU TOWNSHIP, with an area of 646 square miles and a population (1901) of 10,809.

Old Dihing.—River in Lakhimpur District, Eastern Bengal and Assam. *See* DIHING, BURI.

Old Mālda.—Town in Mālda District, Eastern Bengal and Assam. *See* MĀLDA TOWN.

Olpād.—North-western *tāluka* of Surat District, Bombay, lying between 21° and 21° 28′ N. and 72° 35′ and 72° 57′ E., with an area of 323 square miles. The *tāluka* contains 118 villages and one town, Olpād (population, 3,275), the head-quarters. The population in 1901 was 58,748, compared with 66,668 in 1891. The density, 182 persons per square mile, is much below the District average. Land revenue and cesses in 1903–4 amounted to nearly 5·6 lakhs. Olpād forms an almost unbroken plain, and the fields are generally unenclosed owing to the low level and the inroads of the sea. Well-irrigation is possible only in a few of the eastern villages. The climate is generally healthy. The rainfall (39 inches) is less than in the rest of the District.

Ongole Subdivision.—Subdivision of Guntūr District, Madras, consisting of the ONGOLE and BĀPATLA *tāluks*.

Ongole Tāluk.—*Tāluk* of Guntūr District, Madras, lying between 15° 17′ and 15° 59′ N. and 79° 48′ and 80° 16′ E., with an area of 796 square miles. It is mostly flat, but contains a few hills, of which Chimākurti is the loftiest, being 2,097 feet above sea-level. The Gundlakamma, the Mudigandi, the Mūsi with its tributary the Chilakaleru, and the Paleru are the principal streams. The population in 1901 was 224,172, compared with 225,240 in 1891. It contains three towns—ONGOLE (population, 12,864), the head-quarters, KOTTAPATAM (7,626), and ADDANKI (7,230)—and 162 villages. The demand on account of land revenue and cesses in 1903–4 amounted to Rs. 4,30,000. The predominant soils are black clay and black loam, both very fertile

if rain falls. Of the occupied area in Government villages of 288,000 acres, only 2,700 acres are 'wet' land, the rest being 'dry.' Some of the former is watered from the Kistna. *Cholam* (*Sorghum vulgare*) is the most important crop.

Ongole Town.—Head-quarters of the subdivision and *tāluk* of the same name in Guntūr District, Madras, situated in 15° 31′ N. and 80° 3′ E., on the East Coast Railway, and on the trunk road from Madras to Calcutta, 181 miles from Madras. Population (1901), 12,864. It was constituted a municipality in 1876. The municipal income and expenditure during the ten years ending 1902–3 averaged Rs. 13,900 and Rs. 13,200 respectively. In 1903–4 the income was Rs. 16,000, the chief sources being the profession tax, the tax on buildings, and tolls; and the expenditure was Rs. 17,000. Ongole contains an industrial institute for the benefit of the native Christian community, under the management of the American Baptist Mission. In this aluminium work and boot- and shoemaking are taught. It also possesses a second-grade college and other institutions for the education of boys and girls, two orphanages for children, and a training school for girls managed by the same mission. Other institutions are a municipal lower secondary school, and a Government training school for the instruction of teachers of classes up to the primary standard. Pulses, *ghī*, and leather are exported to Madras and elsewhere.

Oodeypore.—State and capital thereof in Rājputāna. *See* UDAIPUR.

Oomta.—Town in Kadi *prānt*, Baroda State. *See* UMTA.

Ooregam.—Village in Kolār District, Mysore State. *See* URIGAM.

Oossoor.—Subdivision, *tāluk*, and town in Salem District, Madras. *See* HOSŪR.

Ootacamund Subdivision.—Subdivision of the Nīlgiri District, Madras, consisting of the *tāluks* of OOTACAMUND and GŪDALŪR.

Ootacamund Tāluk.—The largest of the three *tāluks* in the Nīlgiri District, Madras, lying between 11° 12′ and 11° 39′ N. and 76° 25′ and 76° 52′ E., and corresponding almost exactly with the old divisions of Todanād and Kundahnād. It also includes the village of Masnigudi, below the Sīgūr *ghāt*, the only village in the District where ordinary *ryotwāri* tenures obtain. The area is 440 square miles, and the population in 1901 was 37,998, compared with 31,602 in 1891. It contains one town, OOTACAMUND (population, 18,956), the head-quarters; and 17 revenue villages. The demand for land revenue in 1903–4 amounted to Rs. 38,000. The whole *tāluk* is exposed to the south-west monsoon, the annual rainfall at the westernmost village of Naduvattam averaging 102 inches. Owing to its high elevation, the vegetation is almost that of the temperate zone. Tea and cinchona are largely grown, the latter chiefly at Naduvattam and on the slopes of Dodabetta in the Government plantations. Experiments with jalap are also being

made at the latter. Through Ootacamund *tāluk* runs the Pykāra river, the only stream of any size in the District, which leaves the plateau at the north-west corner of the *tāluk* in two picturesque falls. More than half the area (309 square miles) consists of 'reserved' forest.

Ootacamund Town.—Head-quarters of the Nīlgiri District, Madras, and of the *tāluk* of the same name, situated in 11° 25′ N. and 76° 42′ E., on the Nīlgiri plateau, about 7,500 feet above the sea; distance from Madras city, 356 miles (the last 11 by road); from Bombay, 1,053 miles; and from Calcutta, 1,374 miles. Population (1901), 18,596, of whom 10,770 were Hindus, 2,378 Muhammadans, and 5,345 Christians. The nearest railway station is at present at COONOOR, which is reached by a rack railway up the slopes of the plateau from METTUPĀLAIYAM; but the extension of the line to Ootacamund has been taken in hand.

Besides containing the Collector's and the *tāluk* offices, Ootacamund is the head-quarters of the Madras Government during the hot season, and of the general officer commanding the Ninth (Secunderābād) Division and his staff. It is thus the chief sanitarium in Southern India. The possibilities of the climate of the plateau on which Ootacamund stands were first brought to notice in 1818 by two civilians who had reached it from the Coimbatore side, but it is doubtful whether they ever visited the present site of Ootacamund itself. The next year Mr. John Sullivan, the Collector of Coimbatore, within which District the Nīlgiris were then included, visited the plateau, and two years later he built the first house at Ootacamund. This was Stonehouse, which has given its name to the hill on which the Government offices are now situated. The name of the station is a corruption of Utaka-mand, a *mand*, or collection of quaint huts in which the aboriginal tribe of the Todas live, not far from Stonehouse. Mr. Sullivan did much to enlist the sympathies of the authorities in the development of the place, and in 1827 it was formally established as the sanitarium of the Presidency. Mr. Stephen Rumbold Lushington, Governor of Madras between 1827 and 1832, greatly interested himself in opening up the station, and since then it has steadily increased and improved. The figures of population given above do not afford an adequate idea of its size, as the Census was taken in the cold months before the annual influx of hot-season visitors with their servants and following had arrived; but they demonstrate how considerable is the number of permanent residents.

The station reposes in an amphitheatre surrounded by four great hills: Dodabetta (8,760 feet), the highest point of the Nīlgiri plateau, Snowdon (8,380 feet), Elk Hill (8,090 feet), and the Club Hill. At the bottom of the valley enclosed by these, on the slopes of which are built the various residences and offices, was formerly a wide bog through

which wandered a stream that eventually left the valley on the west. The lower part of this stream has been turned into a lake, round which winds a carriage drive; and the upper part of the bog has been filled in and levelled and converted into the Hobart Park, one of the most beautiful polo and cricket grounds in India, round which runs a race-course with a lap of a mile and a quarter. By the side of the Park stands the chief bazar in the station, and farther west, in the Kāndal Valley, is another large collection of native houses.

West of this again are the Wenlock Downs, a wide expanse about 16 square miles in area, of undulating springy turf diversified with woods and streams, on which are the golf links, and which forms the home country of the Ootacamund Hunt, an institution founded in 1867 to hunt the hardy and fast hill-jackal with foxhounds imported from England. Across the downs and round the outer edges of the plateau run several carriage drives, which wind through beautiful scenery and in places command magnificent views of the low country. These downs and drives, and the possibilities they afford for outdoor exercise, constitute the chief superiority of Ootacamund over the more steep cramped hill stations on the Himālayas.

The station itself has also a great charm. The somewhat mournful-looking Australian trees—the eucalyptus, the wattle, and the *Acacia melanoxylon*—which have been planted throughout it are perhaps now too numerous to be beautiful; but, on the other hand, plants and shrubs which in England require care and shelter here flourish in an almost wild state with wonderful luxuriance. Hedges round gardens frequently consist of roses, geraniums, fuchsia, and even heliotrope. The annual rainfall is about 49 inches, and the frosts in the colder months are only slight, so that flowers bloom in profusion in every month of the year.

Ootacamund was made a municipality in 1866. The receipts and expenditure during the ten years ending 1902–3 (excluding debt heads and other fictitious items) averaged Rs. 1,40,000 and Rs. 1,59,000 respectively. Loans have been necessary to supplement the deficit. In 1903–4 the corresponding figures were Rs. 1,92,000 and Rs. 2,53,000, the chief items among the receipts being a grant from Government, the taxes on houses and lands, and the water rate. The council maintains excellent driving roads throughout the station, has constructed an intercepting sewer to keep the drainage of the main bazar from polluting the lake, supplies the place with water led through pipes from the Marlimund and Tiger Hill reservoirs on the tops of the enclosing hills, controls a weekly market which is in many ways a model institution and is well supplied with commodities from the plains, and is contemplating an elaborate scheme of drainage estimated to cost 3 lakhs. Plague visited the station in 1903; and Government has lent the council money to enable it to open out the more crowded

parts of the bazars, and purchase house sites for natives outside the centre of the station.

Ootacamund contains a branch of the Bank of Madras, a library established in 1859 and possessing about 15,000 volumes, several churches belonging to different denominations (of which the oldest is St. Stephen's, the chief Church of England place of worship), a residential Club, and a Gymkhana Club. The Government Botanical Gardens, situated in a sheltered valley surrounding Government House, contain many rare trees and plants and are in charge of a Curator. They cover 51 acres, and were established in 1842 during the governorship of the Marquis of Tweeddale. The educational and medical institutions of the town are referred to in the article on the NĪLGIRI DISTRICT.

Orai Tahsīl (*Urai*).—Head-quarters *tahsīl* of Jālaun District, United Provinces, conterminous with the *pargana* of the same name, lying between 25° 46′ and 26° 3′ N. and 79° 7′ and 79° 34′ E., with an area of 311 square miles. Population fell from 67,702 in 1891 to 59,065 in 1901, the rate of decrease being the highest in the District. There are 105 villages and two towns, including ORAI (population, 8,458), the District and *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 2,02,000, and for cesses Rs. 33,000. The density of population, 190 persons per square mile, is much below the District average. Orai lies north of the Betwā, and the greater part of it forms an extensive plain of rich black soil called *mār*. This tract is at present greatly depressed owing to a succession of bad years, commencing in 1893, when a hailstorm caused such damage that Rs. 55,000 of revenue was remitted. The Hamīrpur branch of the Betwā Canal, which crosses the *tahsīl*, is being more largely used for irrigating the black soil. In 1899–1900 the area under cultivation was 134 square miles, of which only 2 were irrigated.

Orai Town (*Urai*).—Head-quarters of Jālaun District and also of the Orai *tahsīl*, United Provinces, situated in 25° 59′ N. and 79° 28′ E., on the Cawnpore-Saugor road, and on the Great Indian Peninsula Railway. Population (1901), 8,458. Orai was chosen in 1839, probably on account of its position on the Cawnpore-Saugor road, as the head-quarters of the newly-annexed territory of Jālaun. It then consisted of a few dilapidated huts, and has been improved to some extent, but still remains a place of no importance except as the District head-quarters. Besides the ordinary offices, Orai contains male and female dispensaries, and high and *tahsīlī* schools with about 200 pupils, and is the head-quarters of a Special Judge under the Bundelkhand Encumbered Estates Act. There is a fine tank with masonry approaches south of the town. A municipality was constituted in 1871. During the ten years ending 1901 the income and expenditure

averaged Rs. 9,000. In 1903-4 the income was Rs. 15,000, chiefly from octroi (Rs. 7,000); and the expenditure was Rs. 12,000. There is no trade.

Orakzai.—A tribe of Pathāns inhabiting the northern slopes of the Samāna range and the adjoining valleys of TĪRĀH. The chief sub-divisions of the Orakzai are as follows:—

	Strength.		Strength.
Masozai	4,500	Ismailzai	2,000
Laskkarzai . . .	6,500	Mishti	3,000
Alizai	500	Malla Khel . . .	800
Muhammad Khel . .	300	Sheikān	3,000
Daulatzai	2,000	Alikhel	3,000

Oraon.—An aboriginal tribe whose home is in Rānchī District, Bengal. The members of the tribe call themselves Kurukh, and they believe that they came from the Carnatic, whence they travelled up the Narbadā river, and settled in Bihār on the banks of the Son. Driven out by the Muhammadans, the tribe split into two divisions, one of which followed the Ganges and finally settled in the Rājmahāl hills, where they were the progenitors of the Māle or Sauriā race, while the other went up the Son and occupied the north-western portion of the Chotā Nāgpur plateau, whence they ousted the earlier Mundā inhabitants. The Oraons numbered 652,286 in 1901, and they inhabit the north and north-west of Rānchī, the south of Palāmau, and the adjoining States of Gāngpur and Jashpur; numbers have also emigrated to the Jalpaigurī tea gardens. Their language is known as Oraon and is akin to Kanarese; it is spoken by 544,000 of the tribe. The majority of the race are Animists, but 156,000 were returned as Hindus, and 62,000 have been converted to Christianity. Unmarried males sleep in a bachelors' dormitory (*dhumkuria*), and marriage does not take place until after the girls have attained the age of puberty.

Orchhā State (*Urchhā*, *Ondchhā*, or Tīkamgarh).—Treaty State in Central India, under the Bundelkhand Agency, lying between 24° 26′ and 25° 40′ N. and 78° 26′ and 79° 21′ E., with an area of about 2,080 square miles. It is bounded on the north and west by the Jhānsi District of the United Provinces; on the south by the Saugor District of the Central Provinces and by the States of Bijāwar and Pannā; and on the east by the States of Charkhārī and Bijāwar and by the Garrauli *jāgīr*. The State also holds the isolated *pargana* of Pāhārpur in the Nizām's territory near Aurangābād, granted by the Delhi emperors. The original capital was at Ondchhā or Orchhā. In 1783 it was transferred to Tehrī or TĪKAMGARH. The latter, which is the name now in general use, was officially recognized in 1887 to prevent confusion with the Tehrī State or Garhwāl. The State lies in the level plain which forms the Betwā-Dhasān *doāb*, these

two streams being the only rivers of any importance. Artificial lakes are numerous, several being of considerable size, as at Baldeogarh, Ladhaura, Jatāra, and Birsāgar.

Orchhā lies wholly in the area of the Bundelkhand gneiss, a hard greyish-pink granitoidal rock, of simple composition, traversed by conspicuous quartz reefs, which constitute an integral part of this formation and almost invariably strike in a north-easterly direction. A number of basaltic dikes strike approximately north-west, at right angles to these reefs. These dikes are probably disintegrated representatives of the volcanic rocks of the Bijāwar series.

Jungles cover a considerable part of the State, but consist only of small trees and rough undergrowth, the principal species being the *dhāk* or *chhiula* (*Butea frondosa*), *semal* (*Bombax malabaricum*), *salai* (*Boswellia serrata*), and various acacias, with brushwood of *Woodfordia*, *Crotolaria*, *Capparis*, and *Desmodium*. The scanty nature of the jungle makes it unsuited to big game, which is not plentiful, though small game abounds.

The climate is noticeably hotter than that of Mālwā. The northern part of the State is considered unhealthy, malarial fever being very prevalent there. The annual rainfall averages 45 inches.

The Orchhā chiefs are Bundelā Rājputs, claiming to be descendants of the Gaharwārs of Benares. The State had no independent existence till comparatively modern times, and its early history is that of BRITISH BUNDELKHAND. According to local records, the first Bundelā who acquired power in this locality was Sohan Pāl, son of a petty chieftain in what is now the Jālaun District of the United Provinces, who lived early in the thirteenth century. He appears to have had differences with his father Arjun Pāl and to have left Mahonī, the ancestral home. For some years he led a life of adventure of which nothing is known. He reappears as the champion of the oppressed Rājputs against the tyranny of the Khangār chief of Garh Kurār, 35 miles east of Orchhā, whose attempts to force the weaker neighbouring Rājputs into matrimonial connexions with his family had raised a storm of indignation. Sohan Pāl, after defeating the Khangārs, established himself at Garh Kurār, and married his daughter to the Ponwār (Paramāra) chief of Pawānya (a village in Gwalior). From this time onwards, the Ponwārs, Bundelās, and Dhandelas, a local branch of the great Chauhān family, formed a separate endogamous group, having no connexion with other Rājput clans, though, according to the State records, these chiefs had married with the great Rājput families up to Arjun Pāl's time. On his father's death Sohan Pāl succeeded to the Mahonī State. Between 1269 and 1501 eight chiefs ruled, who gradually extended the Bundelā dominions. In 1501 Rudra Pratāp succeeded. He was a bold and successful leader; and, although he came into collision with Bahlol

and Sikandar Lodī on several occasions, he managed to increase his dominions considerably during the confusion caused by Bābar's invasion. He died in 1531, and was succeeded by his eldest son, Bhārtī Chand. Bhārtī Chand (1531–54) unsuccessfully attempted to oppose Sher Shāh on his march to Kālinjar in 1545. On his death in 1554, he was succeeded by his brother Madhukar Sāh, who was a religious recluse, and the fortunes of the State began to decline from this time.

The Mughal forces invaded Orchhā for the first time in 1577, when Sādik Khān managed to take Orchhā after a severe fight in which Madhukar's eldest son Horal Deo was killed. In 1591 it was found that the Bundelā chief had seized some *parganas* near Gwalior. The imperial troops attacked and defeated him in an engagement near Narwar, and Madhukar had to flee to the jungles, where he soon after died a natural death. His son Rām Sāh (1592–1604) sued for pardon and was allowed to succeed, but turned out a weak ruler, and the whole State was soon plunged in confusion through the turbulence of his brothers, Bīr Singh Deo, Indrajīt, and Pratāp. Bīr Singh Deo, in order to ingratiate himself with prince Salīm (Jahāngīr), murdered Abul Fazl, the famous author of the *Ain-i-Akbarī*, near Antrī in Gwalior State in 1602 (*see* GWALIOR GIRD). Akbar at once sent an army to capture him, but, although Orchhā was assaulted and taken, Bīr Singh Deo escaped. On his ascension in 1605, Jahāngīr installed Bīr Singh Deo as Rājā of Orchhā in place of his brother Rām Sāh, whom he confined for a time at Delhi, but subsequently released and presented with the fief of CHANDERĪ and Bānpur. Of all the rulers of Orchhā Bīr Singh Deo (1605–27) is the most famous. A man of strong personality and no scruples, he soon acquired large territories and immense wealth. He was, moreover, not only a great warrior but a mighty builder, and has left many monuments of his activity in this direction, as the great palace-forts at Orchhā and Datiā, the Chaturbhuj temple at Orchhā, and many other edifices within and without the limits of Central India testify. His cenotaph at Orchhā, a huge rugged stone-built erection, which stands on the edge of the Betwā river facing his great palace, is a fitting memorial of this architecture-loving monarch. He was succeeded by Jhujhār Singh, a weak but turbulent man, who rapidly plunged his State into difficulties. In 1628 he fell into disgrace, by conniving at the escape through his territories of the rebel Khān Jahān Lodī. In 1630, however, when Khān Jahān again attempted to pass through Orchhā, Jhujhār Singh retrieved his position by attacking him. He was then pardoned and sent on service to the Deccan. While absent, he left the State in charge of his brother Hardaul. On his return, suspecting Hardaul of undue intimacy with his wife, he forced him to drink poison. This act has made his memory a byword throughout Bundelkhand, while the un-

happy brother has been exalted into a local deity, small platforms at which he is worshipped being set up in every village in the country, and his sad end being the subject of numerous local songs. In 1634–5 Jhujhār Singh went into open rebellion. He was pursued by the Mughal forces, and he and his son were driven into the Gondwāna jungles, where both were killed.

From 1635 to 1641 the Orchhā State was without a ruler and virtually ceased to exist. During this period, however, the Bundelā clan was represented by the chiefs of DATIĀ and CHANDERĪ and Champat Rai, whose more famous son Chhatarsāl was the founder of PANNĀ. In 1641 Shāh Jahān granted to Pahār Singh (1641–53), a son of Bīr Singh Deo, the chiefship of Orchhā, in the hope that it would put an end to the ravages of Champat Rai. The Orchhā State, however, possessed but little power, though the chief was always recognized as the head of the clan and consulted in all family disputes. He was followed by Sujān Singh (1653–72), Indramani (1672–5), Jaswant Singh (1675–84), and Bhagwat Singh (1684–9). The chiefs of Bundelkhand served the Mughal emperors loyally in their expeditions to Badakhshān and elsewhere. During the time of Mahārājā Udot Singh (1689–1735), the Marāthās commenced operations in Bundelkhand. In 1729 Chhatarsāl called in the Peshwā to his assistance, and much territory formerly belonging to the Bundelās passed to the Marāthās. Udot Singh was succeeded by Prithwī Singh (1735–52), during whose time more land was lost to the Marāthās, his circumstances being such that he possessed practically only the town of Orchhā, while his retinue consisted of fifty sepoys and one elephant. Sānwant Singh (1752–65) received the title of Mahendra from Alamgīr II. He was followed by Hāte Singh (1765–8), Mān Singh (1768–75), Bhārtī Chand (1775–6), and Vikramājīt (1776–1817).

Vikramājīt entered into relations with the British by a treaty made in 1812. He abdicated in favour of his son Dharam Pāl in 1817, but on Dharam Pāl's death in 1834 resumed charge of the State. He died the same year and was succeeded by his brother Tej Singh (1834–41). The next chief, Sujān Singh, died in 1854 and was followed by Hamīr Singh (1854–74), who received a *sanad* of adoption in 1862. He was succeeded by his brother Pratāp Singh, the present chief. All transit dues were abolished in 1880. The tribute payable to the British Government for the Tahraulī *pargana* was remitted for the good services rendered during the Mutiny. In 1884 Pratāp Singh ceded all land required for railways in his territory. The ruler of the State bears the titles of His Highness and Sarāmad-i-Rājāha-i-Bundelkhand Mahārājā Mahendra Sawai Bahādur, and receives a salute of 17 guns, 2 being personal to the present chief, who was made a G.C.I.E. in 1900, and a G.C.S.I. in 1906.

Population has been: (1881) 311,514, (1891) 333,020, and (1901) 321,634. An increase of 7 per cent. was recorded in the period 1881–91, but during the last decade the total fell by 3 per cent., owing mainly to the severity of the famine of 1896–7. The density is 155 persons per square mile. The State contains one town, TĪKAMGARH (population, 14,050), the capital; and 706 villages, most of which are very small. Hindus number 306,347, or 95 per cent.; Musalmāns, 8,248; Jains, 5,884; Animists, 1,155. The prevailing language is Bundelkhandī, spoken by 94 per cent. of the population. About 40 per cent. of the inhabitants are supported by agriculture and 23 per cent. by general labour.

The chief castes are Chamārs, 36,300, or 11 per cent.; Kāchhīs, 25,900, or 8 per cent.; Brāhmans, 23,200, or 7 per cent.; Lodhīs, 22,400, or 7 per cent.; Dhīmars, 15,600, or 5 per cent.; and Chhatrīs, including Bundelā and other Rājputs, 15,200, or 5 per cent. The other castes are of minor importance.

The soil of Orchhā is nowhere of very high fertility, the greater part of the country being covered with the red and yellow soils common to the gneissic area. Here and there intrusive dikes of trap have given deposits of a richer black soil. The people distinguish a large number of varieties. The principal are *mota*, the loamy soil found in the intrusive dikes; *kābar*, a brown soil, but of a lighter quality; *parua*, a yellow loam; and *rānkar*, a rocky soil strewn with boulders. The best soil is found in the Tahraulī *pargana* to the north. The usual systems of cultivation prevailing in Bundelkhand are followed. The cultivators are assisted by grants of grain and money at the beginning of the sowing season, the State taking a commission of 25 per cent. in kind on seed given, and of 12 per cent. on cash loans. Of the total area, 1,614 square miles, or 78 per cent., are *khālsa* (State land), while 466 square miles have been alienated in grants (*jāgīrs*). About 994 square miles are cultivated, of which 232 square miles are irrigated. Of the uncultivated area of 1,086 square miles, 166 square miles are covered with forest, 601 square miles are cultivable, and the rest is uncultivable waste. Pasture land is ample, but no special breeds of cattle are raised. *Jowār* occupies 94 square miles, or 9 per cent.; rice, 76 square miles, or 8 per cent.; barley, 71 square miles, or 7 per cent.; *til*, 70 square miles, or 7 per cent.; gram, 57 square miles, or 6 per cent.; wheat, 47 square miles, or 5 per cent.; and pulses, 29 square miles, or 3 per cent.

Irrigation is confined to the spring crops and garden produce, and water is obtained from tanks, or raised from wells by the Persian wheel. It is a common practice to have the watering done by contract, one-third of the produce of the land being given in payment. Wages for agricultural work are paid in kind, 2 to 3 seers of grain being given to

each worker per diem. The village artisans, blacksmiths, carpenters, who keep the agricultural implements in order, receive shares of each crop.

The forests of Orchhā, though covering a large area, are not of any particular value, consisting mostly of small trees and scrub. The trees are divided into three classes, those in the first class, which are of value for their timber or fruit, being alone 'reserved.' The first class contains teak (*Tectona grandis*), *achār* (*Buchanania latifolia*), *tendū* (*Diospyros tomentosa*), *bel* (*Aegle Marmelos*), and *kūradai* (*Cleistanthus collinus*); the second class, *seja* (*Lagerstroemia parviflora*), *khair* (*Acacia Catechu*), *nīm* (*Melia Azadirachta*), *reunja* (*Acacia leucophloea*); the third class, *chhiula* (*Butea frondosa*) and *salai* (*Boswellia serrata*). The forest work is done by the jungle tribe of Sahariās.

Though trade has increased considerably of late years, it is not yet in a flourishing condition owing to want of communications. Grain, *ghī*, and coarse cotton cloth are the chief exports, being sent to Bombay and Cawnpore. A little iron is still smelted in a few places, but the industry has almost died out, the guns formerly manufactured in some quantity being now no longer in demand. In the State workshop at Tīkamgarh a combined saw-mill, lathe, planing machine, and flour-mill are worked by steam.

Means of communication are the Jhānsi-Bhopāl and Jhānsi-Mānikpur sections of the Great Indian Peninsula Railway, with stations at Orchhā, Arjār, and Teharka. The only metalled roads are the high road from Jhānsi to Nowgong, which traverses the Tahraulī *pargana*, the feeder road from Orchhā railway station to Orchhā town, and that from Tīkamgarh which meets the road from Lalitpur. There was no postal system of any kind in the State until 1895. A regular State service was then instituted, with an office at each police station. An issue of stamps was also made. British post offices are maintained at Tīkamgarh, Baldeogarh, and Jatāra, and telegraph offices at the Orchhā, Arjār, and Teharka railway stations.

The State is divided into five *parganas*, each under a *tahsīldār*, who is magistrate and revenue collector for his charge. The *tahsīl* head-quarters are at Baldeogarh, Jatāra, Orchhā, Tahraulī, and Tīkamgarh. The largest *tahsīl* is Jatāra, with an area of 600 square miles, while the others average 300. The administration is divided into three departments, dealing respectively with the chief's personal establishment, the general administration, and military matters. The Mahārājā is assisted by a minister, entitled the *Madār-ul-Muhām*, who has immediate control of administrative machinery. All matters are referred for final orders to the chief. In judicial cases the chief has full powers of life and death over his subjects, and all final appeals are heard by him. The subordinate criminal and civil courts are more or less modelled

on those of British India, the Penal Code being used as a general guide in issuing local regulations. Cases relating to caste are referred to the *Panchāyat* (deliberative committee).

The State has a normal revenue of 7 lakhs, besides 1·6 lakhs assigned to the *jāgīrdārs*. The land revenue is for the most part farmed out to headmen, who are responsible for the collections, though the leases are granted directly by the State to the cultivators. The expenditure is about 6·5 lakhs. Since 1877 several rough settlements have been made, but only for short periods, the last being in 1902. The land is assessed according to quality, the rates varying for irrigated *mota* land from Rs. 8 to Rs. 4–8, for *parua* land from Rs. 3–3–2 to Rs. 2, and for unirrigated *mota* land from Rs. 4 to Rs. 2–6–5 per acre. The incidence of land revenue demand is Rs. 1–2–5 per acre of cultivated area, and R. 0–8–9 per acre of the total area. Excise is given out on contract as a monopoly, and brings in Rs. 14,400 a year.

The conversion of the Orchhā coinage has not yet been undertaken, the *Gajja shāhi* rupee minted at Tīkamgarh being still the principal currency. The mint was originally situated at Orchhā, but was transferred when the capital was changed. Gold, silver, and copper coins are struck at this mint.

The regular army consists of 250 cavalry and 1,000 infantry, and 100 gunners with 90 serviceable guns. The irregulars assist in policing the State, in addition to 150 regular police and 402 *chaukīdārs*. A Central jail is maintained at Tīkamgarh.

Orchhā, like other States in Bundelkhand, is backward in education, only a little over 1 per cent. of the population being returned as literate in 1901. The Mahendra school, opened in 1866, prepares boys for the entrance examination of the Allahābād University. There are also 8 village schools with 234 pupils, and one girls' school with 40 pupils. The annual expenditure on education is Rs. 3,300. One hospital has been opened at Tīkamgarh and vaccination is carried out, the annual cost of the medical establishment being Rs. 2,500.

Orchhā Town.—Former capital of the State of the same name, in Central India, situated in 25° 21′ N. and 78° 38′ E., $3\frac{1}{2}$ miles from a station on the Jhānsi-Mānikpur section of the Great Indian Peninsula Railway. Population (1901), 1,830. The town, which was founded by Bhārtī Chand in 1531, stands on the very edge of the Betwā river in a hollow surrounded by scrub jungle. In 1634 the jungle must have been of considerable thickness, as in spite of its low position the Mughals found it a difficult place to approach. In 1783 Vikramājīt removed the capital to Tīkamgarh, and since that time Orchhā has rapidly fallen into decay. It is now of interest only on account of its magnificent buildings, of which the finest were erected by Bīr Singh Deo. On an island in the Betwā, which has been surrounded by

a battlemented wall and is approached by a causeway over a fine bridge of fourteen arches, stands a huge palace-fort, mainly the work of Bīr Singh Deo (1605–27), but consisting of several connected buildings erected at different times, the finest of which are the Rājmandir and Jahāngīr-mahal. The Rājmandir is built in the shape of a square with an almost entirely plain exterior, relieved by projecting windows and a line of delicate domes along the summit. The Jahāngīr-mahal, so called from the emperor Jahāngīr having stayed in it during a visit to his friend Bīr Singh Deo, is a much handsomer building. Also built in rectangular form, it is relieved by a circular tower at each corner surmounted by a dome, while two lines of graceful balconies supported on brackets mark the central storeys. These balconies are closed in with fine screens of pierced stonework. Above, the roof is crowned by eight large fluted domes with smaller domes between them, connected by an ornamented balustrade. The whole building is magnificent in its combination of massive strength and delicate ornament, and is perhaps unsurpassed as a specimen of Hindu domestic architecture. Many temples are scattered over the area formerly occupied by the town, the finest being the Chaturbhuj, dedicated as its name implies to the 'four-armed' Vishnu. This temple stands on a huge stone platform, and is a rectangular building with a very plain exterior, ornamented by two large and four small spires, one of which has been destroyed, of the pine-cone variety common in Bundelkhand. Inside it is quite devoid of carving or ornament. The great loftiness of its ceilings, an unusual feature in a Hindu temple, its bare walls, and the arrangement of its sanctuary suggest a Christian church rather than a Hindu temple. Of the other buildings, the cenotaphs of Bhārti Chand (1531–54), Madhukar Sāh (1554–92), Bīr Singh Deo (1605–27), Pahār Singh (1641–53), and Sānwant Singh (1752–65), all rulers of Orchhā, and their Rānīs are grouped together on the river's edge below the fort. That of Bīr Singh Deo, had it been completed, would have been the finest; but the domes were never finished, and it remains a mere rugged pile of stone, massive and picturesque, but with no pretensions to architectural form. Not far from the Chaturbhuj temple is the shrine of Hardaul, where that prince is said to have died of the poison administered by his brother Jhujhār Singh. Orchhā is still the head-quarters of a *tahsīl*.

Orissa Division.—Division of Bengal, extending from West Bengal to Madras and from the Chotā Nāgpur plateau to the Bay of Bengal, and lying between 19° 28′ and 22° 4′ N. and 82° 38′ and 87° 31′ E. The head-quarters of the Division are at CUTTACK CITY; and it includes five Districts, with area, population, and revenue as shown in the table on the next page.

Sambalpur was transferred to Bengal from the Chattīsgarh Division

of the Central Provinces in 1905, two large *zamīndāris* which were previously comprised within that District remaining attached to the Central Provinces.

District.	Area in square miles.	Population, 1901.	Land revenue and cesses, 1903-4, in thousands of rupees.
Cuttack . .	3,654	2,062,758	13,91
Balasore . .	2,085	1,071,197	7,30
Angul . .	1,681	191,911	87
Purī . . .	2,499	1,017,284	7,97
Sambalpur. .	3,851	659,971	1,86 *
Total	13,770	5,003,121	31,91

* Includes Rs. 4,500 (additional rate) and Rs. 18,300 (*patwārī* cess).
In the *Census Report* of 1901 the area of Cuttack was shown as 3,629 square miles, of Balasore as 2,059 square miles, and of Purī as 2,472 square miles. The figures adopted above for Purī are taken from the Settlement Report, while those for Cuttack and Balasore were supplied by the Surveyor-General.

The term Orissa, properly speaking, means the country in which the speakers of Oriyā form the dominant people. During the period of British rule the name has been applied to the tract extending from the Chilka Lake to the Subarnarekhā river, which comprises the four Districts first mentioned and also the ORISSA TRIBUTARY STATES, a group of twenty-four Feudatory States, with a population in 1901 of 3,173,395 and an area of 28,046 square miles. The Commissioner of Orissa is Superintendent of these States, in respect of which he exercises the powers of a Sessions Judge and High Court.

The population of the Division increased from 3,554,871 in 1872 to 4,309,923 in 1881, to 4,666,227 in 1891, and to 5,003,121 in 1901. The density is 363 persons per square mile, compared with 438 in Bengal as a whole. In 1901 Hindus constituted 95·5 per cent. of the total; there were 106,889 Muhammadans, 90,038 Animists, and 5,751 Christians.

The four Districts first mentioned occupy a narrow alluvial tract between the sea and the Chotā Nāgpur plateau, while Sambalpur, lying in the valley of the Mahānadī, is separated from them by a broken hilly tract and from the Chattīsgarh plain on the west by a jungle-covered range of hills. The Division possesses a language of its own, and a system of castes differing alike from those of Bengal and of Madras. Oriyā is also spoken over a considerable area in the northern Districts of Madras and in the adjoining parts of the Central Provinces and of Chotā Nāgpur, while it has largely modified the Bengali of South Midnapore; the distinctive Oriyā castes are also well represented for a considerable distance beyond the borders of the Division.

At the dawn of history Orissa formed part of the powerful kingdom of Kalinga, which stretched from the mouths of the Ganges to those of the Godāvari. It was conquered by Asoka, but by 150 B.C. had again passed to the Kalinga kings. Jainism was then beginning to spread in the land; but about the second century A.D. it was succeeded, according to Buddhist tradition, by the latter creed, which was still flourishing in A.D. 640. Subsequently the power of the Kalinga dynasty declined, and Orissa seems to have become independent. In 610, however, an inscription of Sasānka, king of Magadha, claims it as a part of the dominions of that monarch, and in 640 it was conquered by Harshavardhana of Kanauj. In the tenth and eleventh centuries Orissa is said to have been under the rule of the Kesari kings, to whose rule are ascribed the Saiva temples at BHUBANESWAR and most of the ruins in the Alti hills; but the existence of such a dynasty is uncertain. Then followed the dynasty founded by Chora Gangā of Kalinganagar. These kings were of the Vaishnava faith; they built the famous temple of Jagannāth at PURĪ and the black pagoda of KONĀRAK. There were frequent wars with the Muhammadans, and about 1361 the emperor Fīroz Shāh conducted an inroad into Orissa in person. In 1434 Kapileswar Deva of the Solar line usurped the throne. He extended his dominions to the south, where Muhammadan inroads had subverted the old order, as far as the Penner river; but his successors were gradually shorn of these additions by the Musalmān rulers of Golconda. From the north also the onset of the Muhammadans became more and more insistent; and at last in 1568, after a period of civil war, the last Hindu king, a usurper of the name of Mukund Deo, was overthrown by Kāla Pāhār, the general of Sulaimān Kararānī. Orissa (including Midnapore) remained in the possession of the Afghāns till 1592, when Mān Singh, Akbar's Hindu general, annexed it to the Mughal empire. It was placed under separate governors, but Midnapore and Balasore were subsequently transferred to Bengal. In 1751 Alī Vardī Khān ceded the province to the Bhonslas of Nāgpur, in whose possession it remained until its conquest by the British in 1803. The Marāthās made no attempt to establish any civil administration, and their rule was confined to a periodic harrying of the country by their cavalry, who extorted whatever they could from the people. In 1804 a board of two Commissioners was appointed to administer the province, but in the following year it was designated the District of Cuttack and placed in charge of a Collector, Judge, and Magistrate. In 1828 it was split up into the three Regulation Districts of CUTTACK, BALASORE, and PURĪ, and the non-Regulation TRIBUTARY STATES. As already explained, SAMBALPUR has only recently been attached to Orissa; and an account of its history, which differs in several respects from that of the rest of the Division, will be found in the article on that District.

Orissa has on more than one occasion suffered from disastrous famines; and within recent times it was devastated by the memorable calamity of 1865–7. The full extent of the crop failure consequent on the scanty rainfall of 1865 and the exhaustion of the local food-supplies was not realized by the authorities in time; and when at last, in June, 1866, an effort was made to provide the starving population with food, the south-west monsoon prevented the ships, lying laden with grain in the port of Calcutta, from reaching the stricken tract. It is said that a quarter of the population died of starvation and of the diseases that supervened. Orissa has now been made accessible by the East Coast section of the Bengal-Nāgpur Railway, which connects it with Calcutta and Madras; and Cuttack and portions of Balasore have been provided with an elaborate and costly system of irrigation known as the ORISSA CANALS system.

The Districts of the Orissa Division are temporarily settled, and a resettlement of all the eastern Districts, except Angul, has recently (1889–99) been effected. The area brought under assessment was 2,950 square miles, against 2,212 square miles at the previous settlement of 1837; and the revenue is 21·05 lakhs, or Rs. 1–1–10 per acre, compared with 13·84 lakhs, or R. 0–15–7, on the previous occasion. The rents payable by tenants were fixed in the course of the settlement operations; they work out on an average to Rs. 2–1 per acre. The term of the last settlement of Sambalpur expired in 1902, and the District is now under resettlement.

The Division contains 7 towns and 15,416 villages. The largest towns are CUTTACK (population 51,364), PURĪ (49,334), and BALASORE (20,880). There are ports at FALSE POINT, CHĀNDBĀLI, Balasore, and Purī, and the total value of the imports and exports in 1903–4 was 28·9 lakhs and 53·8 lakhs respectively.

The temple of Jagannāth at Purī is well-known, and the town contained at the time of the Census of 1901 over 17,000 pilgrims. Other famous antiquities are the Lingarāj temple at Bhubaneswar, the black pagoda at Konārak, several temples at JĀJPUR, and the caves in the KHANDGIRI and UDAYAGIRI hills.

[Rājendralāla Mitra, *Antiquities of Orissa* (Calcutta, 1875, 1880); A. Stirling, *Account of Orissa Proper or Cuttack* (Serampore, 1822, reprinted in Calcutta, 1904); Sir W. W. Hunter, *Orissa* (1872); G. Toynbee, *History of Orissa from* 1803 *to* 1828 (Calcutta, 1873); S. L. Maddox, *Final Report on the Survey and Settlement of the Province of Orissa* (Calcutta, 1900); also several papers by Monmohan Chakravarti in the *Journal of the Asiatic Society of Bengal*, vol. lxi, pp. 43–9 and 1044–1109, vol. lxii, pp. 88–109, vol. lxiv, pp. 128–54, vol. lxvi, pp. 317–48, and vol. lxvii, pp. 328–86.]

Orissa Tributary States (also known as the Orissa Tributary

Mahāls, or as the Garhjāts).—A group of seventeen[1] dependent territories, situated between the Mahānadī delta and the Central Provinces, and forming the mountainous background of the Orissa Division of Bengal. They lie between 19° 53′ and 22° 34′ N. and 83° 35′ and 87° 10′ E., and have an area of 14,387 square miles and a population (1901) of 1,947,802. They are bounded on the north by the Districts of Singhbhūm and Midnapore; on the east by Orissa; on the south by Ganjām District in the Madras Presidency; and on the west by the Tributary States of Patnā, Sonpur, Rairākhol, Bāmra, and Bonai. The names of the individual States are ATHGARH, TĀLCHER, MAYŪRBHANJ, NĪLGIRI, KEONJHAR, PĀL LAHARĀ, DHENKĀNĀL, ATHMALLIK, HINDOL, NARSINGHPUR, BARĀMBĀ, TIGIRIĀ, KHANDPARĀ, NAYĀGARH, RANPUR, DASPALLĀ, and BAUD. A separate article on each will be found under its own name.

Physical aspects.

The States occupy a succession of ranges rolling back towards the centre of the peninsula. They form three watersheds with fine valleys between, down which pour the three great rivers of the inner table-land. The southernmost is the valley of the Mahānadī, at some places closely hemmed in by peaks on either side and forming picturesque passes, at others spreading out into fertile plains, green with rice, and watered by a thousand mountain streams. At the Barmūl pass the river winds round magnificently wooded hills, from 1,500 to 2,500 feet high. Crags and peaks of a wild beauty overhang its channel, which at one part is so narrow that the water rises 70 feet in time of flood. From the north bank of the Mahānadī the ranges tower into a fine watershed, from 2,000 to 2,500 feet high, running north-west and south-east and forming the boundary of the States of Narsinghpur and Barāmbā. On the other side they slope down upon the States of Hindol and Dhenkānāl, supplying countless little feeders to the Brāhmanī, which occupies the second of the three valleys. From the north bank of this river the hills again roll back into magnificent ranges, running in the same general direction as before, but more confused and wilder, till they rise into the Keonjhar watershed with peaks from 2,500 to 3,500 feet high, culminating in Malayagiri, 3,895 feet above the sea, in the State of Pāl Laharā. This watershed, in turn, slopes down into the third valley, that of the Baitaranī, from whose eastern or left bank rise the mountains of Mayūrbhanj, heaped upon each other in noble masses of rock from 3,000 to nearly 4,000 feet high, sending countless tributaries to the Baitaranī on the south, and pouring down the Burhābalang

[1] In 1905 five States (BĀMRA, RAIRĀKHOL, SONPUR, PATNA, and KĀLĀHANDI) were added from the Central Provinces, and two (GĀNGPUR and BONAI) from the Chotā Nāgpur States. These have an area of 13,659 square miles and a population (1901) of 1,225,593.

and the feeders of the Subarnarekhā on the north. The hill ranges are densely wooded to the summit, and, except at the regular passes, are inaccessible to beasts of burden. The intermediate valleys yield rich crops in return for negligent cultivation, and a vast quantity of land might be reclaimed on their outskirts and lower slopes. Cultivation is, however, rapidly extending in all the States, owing to improved means of communication and to the pressure of population in the adjoining British Districts.

Besides Malayagiri, the principal peaks are Meghāsanī (3,824 feet) in Mayūrbhanj; Gandhamādan (3,479 feet), Thākurāni (3,003 feet), and Tomāk (2,577 feet) in Keonjhar; Pānchdhar (2,948 feet) in Athmallik; Goāldes (2,506 feet) in Daspallā; Suliyā (2,239 feet) in Nayāgarh; and Kopilās (2,098 feet) in Dhenkānāl.

The principal rivers are the MAHĀNADĪ, the BRĀHMANĪ, the BAITARANĪ, and the Burhābalang. The Mahānadī enters the Tributary States in Baud, forming the boundary between that State on the south and Athmallik and Angul on the north for 49 miles. It then divides Daspallā, Khandparā, and Cuttack District on the south from Narsinghpur, Barāmbā, Tigiriā, and Athgarh on the north. In the last State it debouches through a narrow gorge upon the Cuttack delta. It is navigable throughout the Tributary States by flat-bottomed boats of about 25 tons burden, and carries a considerable trade, which has decreased since the opening of the Bengal-Nāgpur Railway; it would afford even more valuable facilities for navigation but for the numerous rocks and sandbanks in its channel. Its chief feeders in the Tributary States are, on its north or left bank, the Sāpua in Athgarh, and the Dandātapā and Māno in Athmallik; on its south or right bank, the Kusumī and Kamai in Khandparā, with the Jorāmu, Hināmandā, Gānduni, Bolat, Sālkībāgh, Mārini, and Tel. This last stream divides the Orissa Tributary States from those of the Central Provinces, and forms the boundary between the States of Baud and Sonpur. The Brāhmanī, which is formed by the junction of the South Koel and Sānkh in Gāngpur State, enters Tālcher from Bonai State, and passes through Tālcher and Dhenkānāl into Cuttack District. It is navigable for a few months of the year as far as 4 miles below Tālcher, where there are some dangerous rocks. The Baitaranī rises among the hills in the north-west of Keonjhar State; its chief affluent is the Sālandī, which rises in Mayūrbhanj. In the dry season the Baitaranī is navigable by small boats, but with difficulty, as far as Anandpur, a large trading village in Keonjhar on its north bank. The Burhābalang rises in Mayūrbhanj and, after receiving two tributaries, the Gangāhar and Sunai, passes into Balasore.

So far as is known at present, gneissic rocks cover these States, except Tālcher and parts of Angul and Athgarh, where sandstones,

conglomerate, and shales belonging to the Gondwāna system are developed[1].

The narrower valleys are often terraced for rice cultivation, and these rice-fields and their margins abound in marsh and water-plants. The surface of the plateau land between the valleys, where level, is often bare and rocky, but, where undulating, is usually clothed with a dense scrub jungle, in which *Dendrocalamus strictus* is prominent. The steep slopes of the hills are covered with a dense forest mixed with many climbers. *Sāl* (*Shorea robusta*) is often gregarious; and among the other noteworthy trees are species of *Buchanania*, *Semecarpus*, *Terminalia*, *Cedrela*, *Cassia*, *Butea*, *Bauhinia*, *Acacia*, and *Adina*, which are found also on the lower Himālayan slopes. Mixed with these, however, are a number of trees and shrubs characteristic of Central India, such as *Cochlospermum*, *Soymida*, *Boswellia*, *Hardwickia*, and *Bassia*, which do not cross the Gangetic plain.

Wild elephants infest the jungles of Athmallik, Barāmbā, Dhenkānāl, Hindol, Mayūrbhanj, Nīlgiri, and Narsinghpur, and the chiefs of some of these States carry on *khedda* operations in the beginning of the cold season. Game, big and small, is plentiful in most of the States, including tigers, leopards, hyenas, bears, bison, deer of several kinds, antelope, wild hog, hares, wild-fowl, peafowl, partridges, &c. Tigers carry off considerable numbers of men and cattle every year. Crocodiles swarm in the large rivers. Among snakes, pythons and the *ahirāj* or hamadryad (*Ophiophagus elaps*) are met with in the jungles, while cobras and *karaits* are responsible for hundreds of deaths by snake-bite.

No record has been kept of the temperature, but the climate is said to be similar to that of the rest of Orissa, except that it is hotter in summer and colder in winter. During a period of five years the annual rainfall has averaged 55 inches, of which 5·6 inches fell from January to May, 48·6 inches from June to October, and one inch in November and December. Failure of the autumn rains is not frequent, but it involves, when it does occur, a more or less serious failure of the rice crop. The low-lying lands on the banks of the Mahānadī and Brāhmanī are subject to devastating floods and to deterioration by the deposit of sand; the floods of 1866, 1872, 1894, and 1900 were especially destructive.

History.

The Tributary States have no connected or authentic history. Comprising the western and hilly portion of the province of Orissa, they were never brought under the central government, but from the earliest times consisted of numerous petty principalities which were more or less independent of one another. They were first inhabited by aboriginal races, chiefly Bhuiyās,

[1] *Memoirs, Geological Survey of India*, vol. i, 'Geological Structure of Bānkurā, Midnapore, and Orissa.'

Savaras, Gonds, and Khonds, who were divided into innumerable communal or tribal groups each under its own chief or headman. These carried on incessant warfare with their neighbours on the one hand and with the wild beasts of the forests on the other. In course of time their hill retreats were penetrated by Aryan adventurers, who, by reason of their superior prowess and intelligence, gradually overthrew the tribal chiefs and established themselves in their place. Tradition relates how these daring interlopers, most of whom were Rājputs from the north, came to Purī on a pilgrimage and remained behind to found kingdoms and dynasties. It was thus that Jai Singh became ruler of Mayūrbhanj over 1,300 years ago, and was succeeded by his eldest son, while his second son seized Keonjhar. The chiefs of Baud and Daspallā are said to be descended from the same stock; and a Rājput origin is also claimed by the Rājās of Athmallik, Narsinghpur, Pāl Laharā, Tālcher, and Tigiriā. Nayāgarh, it is alleged, was founded by a Rājput from Rewah, and a scion of the same family was the ancestor of the present house of Khandparā. On the other hand, the chiefs of a few States, such as Athgarh, Barāmbā, and Dhenkānāl, owe their origin to favourites or distinguished servants of the ruling sovereigns of Orissa. The State of Ranpur is believed to be the most ancient, the list of its chiefs covering a period of over 3,600 years. It is noteworthy that this family is admittedly of Khond origin, and furnishes the only known instance in which, amid many vicissitudes, the supremacy of the original settlers has remained intact. The States acknowledged the suzerainty of the paramount power and were under an implied obligation to render assistance in resisting invaders; but in other respects neither the ancient kings of Orissa nor their successors, the Mughals and Marāthās, ever interfered with their internal administration. All the States have annals of the dynasties that have ruled over them; but they are made up in most part of legend and fiction and long genealogical tables of doubtful accuracy, and contain very few features of general interest.

The British conquest of Orissa from the Marāthās, which took place in 1803, was immediately followed by the submission of ten of the Tributary States, the chiefs of which were the first to enter into treaty engagements. Meanwhile, Major Forbes penetrated through the hilly and jungly country on the west and reached the famous Barmūl pass in Daspallā, the key to what is now the Central Provinces. Here the Marāthās made a last stand, but on November 2 the pass was forced and the enemy fled in confusion. The Rājā of Baud and others hastened to tender their submission. Including Khurdā, the Tributary States were then twenty in number. In the following year the chief of Khurdā rebelled, was vanquished, and forfeited his State, which is now a Government estate and is administered as a subdivision of Purī

District. The Rājā of Bānki was deposed in 1840 for murder, and his State, which escheated to Government, has since been added to the District of Cuttack. In 1847 Angul was annexed on account of the misconduct of its chief, and with the Khondmāls (originally a portion of Baud State) was in 1891 formed into a British District. Athmallik was a tributary of Baud and Pāl Laharā of Keonjhar, and they find no mention in the early treaty engagements. They were both recognized as separate States in the *sanads* of 1874, which at the same time conferred the hereditary title of Rājā on their chiefs. Pāl Laharā, however, still pays to Keonjhar a quit-rent, which is remitted through the Superintendent of the Tributary Mahāls. It has been held that these States do not form part of British India, and the status, position, and power of the chiefs are defined in the *sanads* granted to them in 1894.

Some interesting archaeological remains are found at KHICHING in the Mayūrbhanj State, including statues, pillars, mounds, and the ruins of several temples. The village of BAUD contains a number of small but exquisitely finished temples.

Population.

The population of the States increased from 1,103,699 in 1872 to 1,410,183 in 1881, to 1,696,710 in 1891, and to 1,947,802 in 1901. The earlier enumerations were very defective, and the large increase brought out by each successive Census is due in a great measure to improvements in the arrangements for counting the people. At the same time, there is no doubt that the population is growing rapidly; the inhabitants are hardy and prolific, and there is ample room for expansion. Owing to the presence of low hills and forests, the climate of the greater part of the States is somewhat unhealthy, especially during the rainy season and the beginning of the cold season, when malarial affections prevail to a greater or less extent.

The principal statistics of the Census of 1901 are shown in the table on the next page.

The only towns are DHENKĀNĀL and BHUBAN in Dhenkānāl, BARIPĀDĀ in Mayūrbhanj, and KEONJHAR in Keonjhar. The population is very sparse, but becomes greater on the lower levels as the plains of Orissa are approached. The greatest increase in the decade ending 1901 took place in the State of Athmallik, which gained by immigration from Baud and the Central Provinces, and in Hindol, which also received an accession of new settlers. The comparatively slow rate of increase in Tigiriā and Khandparā is explained by the fact that the population of these States is already much more dense than elsewhere. The only State which shows a loss of population is Baud, which suffered much from epidemic disease and general unhealthiness, and from which many of the restless Khond inhabitants emigrated during

the scarcity of 1900. As a general rule, the growth of the population has been greatest along the borders of the British Districts of Orissa, where the level is comparatively low and the proportion of arable land relatively high. The construction of the railway through Orissa and of feeder roads in connexion with it has greatly improved the communications and raised the prices of produce in this tract. The volume of immigration is very considerable, and the Census of 1901 showed a net gain of 61,000 persons from contiguous territory in Bengal and 7,000 from the Central Provinces. Oriyā is the vernacular of 76·6 per cent. of the total population; Mundā dialects are spoken by 18·4 per cent., including Santālī (nearly 10 per cent.), Ho (5 per cent.), Bhumij, and Juāng; and Bengali is the language of 3·4 per cent. Hindus number 1,778,921 persons, or 91 per cent. of the total, and Animists 159,321, or 8 per cent.

Name of State.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Athgarh	168	...	192	43,784	260	+ 19·6	2,100
Tālcher	399	...	293	60,432	151	+ 14·7	1,275
Mayūrbhanj	4,243	1	3,593	610,383	144	+ 14·7	13,115
Nīlgiri	278	...	466	66,460	239	+ 18·3	3,660
Keonjhar	3,096	1	1,937	285,758	92	+ 15·2	7,348
Pāl Laharā	452	...	265	22,351	49	+ 13·5	518
Dhenkānāl	1,463	2	968	273,662	187	+ 14·8	9,392
Athmallik	730	...	460	40,753	56	+ 28·9	558
Hindol	312	...	234	47,180	151	+ 24·2	1,668
Narsinghpur	199	...	198	39,613	199	+ 17·0	3,309
Barāmbā	134	...	181	38,260	285	+ 17·6	1,675
Tigiriā	46	...	102	22,625	492	+ 10·1	1,105
Khandparā	244	...	325	69,450	284	+ 9·7	1,391
Nayāgarh	588	...	775	140,779	239	+ 19·4	12,013
Ranpur	203	...	261	46,075	227	+ 14·9	3,101
Daspallā	568	...	485	51,987	92	+ 14·0	876
Baud	1,264	...	1,070	88,250	70	− 1·4	1,474
Total	14,387	4	11,805	1,947,802	135	+ 14·8	64,578

The most numerous castes are Chāsas (220,000), Santāls (194,000), Pāns (177,000), Gaurs (150,000), Hos (99,000), Khandaits (86,000), Brāhmans (76,000), Khonds (71,000), Bhumijs (67,000), Bhuiyās (55,000), Kurmīs (54,000), Telis (51,000), Bāthudis (44,000), and Sahars (41,000). The so-called Hindus include a large number of aboriginal and semi-aboriginal tribes. These are most numerous in the mountainous tracts of Mayūrbhanj, Keonjhar, and Baud. The majority, including the Santāls (*see* SANTĀL PARGANAS), Pāns, Hos, Khonds (*see* KHONDMĀLS), BHUMIJS, Savaras, and BHUIYĀS, are of so-called Dravidian stock. The Bāthudis and Sahars are of uncertain

origin. The primitive leaf-wearing Juāngs, a small tribe found chiefly in Keonjhar and Dhenkānāl, deserve mention. The Chāsas, Gaurs, Khandaits, and Kurmīs are derived from various elements and seem to be mainly non-Aryan. Agriculture supports 70·6 per cent. of the population, industries 11·7 per cent., commerce 0·2 per cent., and the professions 1·2 per cent. Small Christian missions are at work in Athgarh, Mayūrbhanj, and Nīlgiri, the total number of Christians in 1901 being 950, of whom 917 were natives.

Agriculture.

The Tributary States, consisting of a succession of hills and valleys, present every variety of soil and conformation of surface. The mountain-sides exhibit bare rocks or are covered only by a thin layer of earth, and extensive ridges of laterite or other hard soil support nothing but scrub growths. The intervening valleys hold rich deposits of clay, loam, and alluvium, varying in thickness from a few inches to several feet, over a foundation of solid metamorphic rocks; the soil is enriched by mineral substances washed down from the disintegrated hills by the annual rains. The rainfall is adequate and well distributed, but the sloping nature of the country enables the numerous hill streams to drain off the rain-water quickly into the main rivers. The forests, where they exist, help to retain a certain amount of moisture; and perennial springs are also met with, though not to any great extent. Cultivation is confined to the valleys and to clearings on the hill slopes. The shifting method of cultivation, locally called *dahi*, has been pursued from time immemorial by the aboriginal tribes in the uplands of Mayūrbhanj, Pāl Laharā, and Keonjhar, and has practically denuded the valuable forests in these parts of all good timber. When preparing a clearing the large trees are ringed, and the smaller ones are removed by the hatchet and fire. The soil is then scratched with primitive hand-ploughs, bullocks being seldom used; and a fairly good miscellaneous crop, consisting of early rice, maize, millets, oilseeds, turmeric, &c., is raised for two or three seasons. The site is then abandoned for a fresh one and is allowed to rest until again covered with jungle, when the same process is repeated. The sloping nature of the country affords ample opportunity for cultivation in terraces, which can easily be irrigated from a tank or reservoir.

The staple crop is rice, of which three kinds are grown: *biāli* or early, *sārad* or winter, and *dālua* or spring. Advantage is taken of the early spring showers to prepare the land for the first two kinds, the former of which is grown on comparatively high land and the latter in hollows and on the lower levels. *Dālua* is cultivated to a limited extent along the edges of basins which remain wet throughout the year. The modes of cultivation are the same as in Orissa proper. As a food-crop, rice is supplemented by millets, such as *chīna*, *mandiā* or

maruā, &c., and maize and pulses, including *bīrhi*, *mūng*, *kurthī*, *rahar*, and gram, which form a large part of the diet of the people. Cereals and oilseeds are grown on the high lands and slopes, the chief oilseeds being mustard, sesamum, and castor-oil; the last is sometimes used by the poorer classes for cooking. Sugar-cane is extensively cultivated, and the coarse sugar which is made from it is not only consumed locally, but is exported to Cuttack and elsewhere. Cotton is largely grown, chiefly for export. Tobacco is raised on the rich silt deposits of rivers and near homesteads, where cattle manure is plentiful. Turmeric is extensively grown for export, and all the ordinary vegetables are cultivated, the commonest being the brinjāl or egg-plant and the pumpkin. The hills produce various tubers and edible roots, upon which the aborigines largely subsist. As a result of the growth of population within the States, of immigration from outside, and of improved communications, cultivation is steadily on the increase; extensive clearings are being made on all sides, and the problem in every State is how to devise measures for the proper conservation of the forests without unduly restricting the reclamation of waste lands. Each chief maintains a number of State granaries, which are replenished by rent payments and repayments of advances in kind and also from the produce of his private lands.

Pasture lands are generally plentiful, and no difficulty is experienced in feeding cattle; during the dry season large numbers are brought up from the plains for grazing purposes. The local breeds of cattle are poor, and no attempt has been made to improve them.

There are no canals, but the cultivators often irrigate their fields from tanks and wells. It is a common practice to construct reservoirs for the storage of water by damming up streams, but this method of irrigation might be utilized much more widely than it is at present. Tanks and wells number about 12,000 each, and the area irrigated from them is roughly estimated at 512 square miles. For irrigating sugar-cane, vegetables, tobacco, &c., in the dry season, the people sink temporary wells in the sandy beds of streams, and lift the water by means of simple levers worked by one or two men.

Forests.

The character of the forests is the same throughout the Tributary Mahāls. The hills in most of the States extend over a large area and are covered with vegetation, but the most valuable timber is found in the intervening narrow valleys. These forests were at one time among the best timber-producing tracts in India; but the chiefs have taken little care of them, and reckless exploitation and clearings for *dahi* cultivation have caused nearly all their valuable timber to disappear. Till lately forest conservancy was practically unknown; but the example of Mayūrbhanj and the British District of Angul, where the forests have been surveyed, 'reserved,'

and brought under regular control, has induced the other States to follow suit, though in a crude and unmethodical way. There is very little good timber left in the vicinity of the Mahānadī and the Brāhmanī rivers, but elsewhere and farther inland the absence of good roads and the difficulty of transport have saved them from wholesale destruction. The principal timber trees are *sāl* (*Shorea robusta*), *piāsāl* (*Pterocarpus Marsupium*), *sissū* (*Dalbergia Sissoo*), *karam* (*Adina cordifolia*), *bandhan* (*Ougeinia dalbergioides*), *gamhār* (*Gmelina arborea*), *tendu* or ebony (*Diospyros melanoxylon*), *mahuā* (*Bassia latifolia*), and *āsan* (*Terminalia tomentosa*). Among other common trees are the mango (*Mangifera indica*), tamarind (*Tamarindus indica*), *jām* (*Eugenia Jambolana*), jack (*Artocarpus integrifolia*), *amrā* or hog-plum (*Spondias mangifera*), *piār* (*Buchanania latifolia*), *haritakī* (*Terminalia Chebula*), *kuchila* (*Strychnos Nux-vomica*), *khair* (*Acacia Catechu*), *gundi* (*Mallotus philippinensis*), *baherā* (*Terminalia belerica*), *semul* or cotton-tree (*Bombax malabaricum*), *karanj* (*Galedupa indica*), *kusum* (*Schleichera trijuga*), banyan (*Ficus indica*), and *pīpal* (*Ficus religiosa*). The minor forest products are honey, beeswax, *tasar*, lac, a dye called *gundi*, and various medicinal drugs. *Sabai* grass (*Ischoemum angustifolium*) grows largely in Dhenkānāl, Keonjhar, Mayūrbhanj, Nīlgiri, Pāl Laharā, Tālcher, and other States, and is used locally for the manufacture of ropes. Paper can also be made from it, and small quantities are now exported for use in the Bengal paper-mills. The area of forests in the Tributary States has not been ascertained, but the revenue from them in seventeen of the States in 1903-4 is reported to have amounted to 2·5 lakhs.

Minerals.

The TĀLCHER coal-field was last explored in 1875, when a thorough examination was made by an officer of the Geological Survey, with no very favourable result. The bed extends to Angul, Athmallik, and Dhenkānāl, having a total area of about 700 square miles; but the coal is of inferior quality. Limestone and sandstone suitable for building purposes are procurable in almost all the States. Iron has been found and worked from the earliest times; and a recent geological survey shows that the iron ores of Mayūrbhanj are of excellent quality. A scheme is now being developed for a railway to carry the latter to Sini in the Saraikelā State, where large iron- and steel-works will be constructed. Gold dust is washed to a small extent in Keonjhar, Dhenkānāl, and Pāl Laharā. A kind of magnesian rock, intermediate in composition between potstone and serpentine, locally called *mugni*, is extensively quarried in Nīlgiri for the manufacture of dishes, plates, and bowls, which have a large sale. Dhenkānāl and a few other States produce talc. Red and yellow ochre is found in Athmallik, Mayūrbhanj, and Nayāgarh.

In Barāmbā and Tigiriā *tasar* silk and cotton cloths of very fine

texture and superior quality are made; they find a ready sale in the local markets and are also exported. In Khandparā and Narsinghpur, brass and bell-metal utensils are manufactured on a large scale; but, since the opening of the railway in Orissa, the industry has suffered from outside competition. In Baud, Dhenkānāl, Daspallā, Khandparā, Mayūrbhanj, and Tālcher blacksmiths make, for local use, iron implements, such as axes, billhooks, crowbars, shovels, spades, sickles, and knives, some of which are very well turned out. At one time the States, like the rest of Orissa, possessed excellent workers in stone and wood, but very few are now met with. In Dhenkānāl and Nayāgarh ivory work of good quality is still made by one or two families.

Trade and communications.

Trade is carried on principally by itinerant dealers from the British Districts and by the ubiquitous Mārwāri and Kābuli. They take away rice, pulses, oilseeds, *tasar* cocoons, &c., and timber and other forest produce, in return for salt, dried fish, European cotton piece-goods, cotton twist, and kerosene oil. A considerable business in hides and horns is carried on by Muhammadans. Most of the trade is with Cuttack, but some also with Balasore and Purī. There are no markets of much importance; KANTILO in Khandparā, ANANDPUR in Keonjhar, and BHUBAN and DHENKĀNĀL in Dhenkānāl are the principal local centres. The larger rivers are open to country boats for about eight months in the year, during which they are largely used for floating down rafts of timber and bamboos. But the greater part of the trade is carried on during the dry season when the rivers are low; country carts are used where there are fair-weather roads, but elsewhere pack-bullocks still form the chief means of transport. Carts with small solid wheels are used for bringing down timber and stone from the forests, and for carrying other goods in places where only rough tracks exist.

The Bengal-Nāgpur Railway passes in proximity to Ranpur, Nīlgiri, and Mayūrbhanj; and Baripādā, the capital of the last State, has recently been connected with it by a branch line on the narrow-gauge, 32 miles long. The most important roads are those from Cuttack to Sambalpur and to Sonpur, which are maintained by Government as fair-weather roads; the former skirts the south, and the latter the north, bank of the Mahānadī. A new diversion of the second road, the greater portion of which is metalled, passes through Dhenkānāl and Angul. Branch roads lead from these main lines of communication to all the States situated in the Mahānadī and Brāhmanī valleys. Mayūrbhanj is traversed by several excellent roads, some of which are metalled and bridged; and in Keonjhar two important roads have recently been made, one to the Balasore and the other to the Singhbhūm boundary. The Mahānadī and Brāhmanī form broad water-

ways during half the year, but there is no steamer or regular boat service on either of them. All the States except Tigiriā and Upper Keonjhar have subsidized British post offices, and the telegraph line to Angul passes through Dhenkānāl; there are also branch telegraph lines to Nīlgiri and Baripādā.

Famine.

The great Orissa famine of 1866 did not extend its ravages to the Tributary States, which have long been free from famine, though some of them have suffered from partial scarcity in recent years, e.g. in 1897 and 1900. The reason of this comparative immunity is to be found in the conformation of the country, which is less subject to devastating floods and which, owing to the presence of wooded hills, is better able to retain moisture than the plains. The natural facilities for irrigation are also better. The people do not depend entirely on the single crop of rice, but grow also other food-grains and a variety of crops. The fruit of the mango and jack and the flower of the *mahuā* tree, with which the forests and village sites abound, afford substantial relief in time of scarcity, and the jungles contain many edible roots and tubers.

Administration.

The States have formed the subject of frequent legislation of a special character. They were taken over from the Marāthās in 1803 with the rest of Orissa; but, as they had always been tributary states rather than regular districts of the native governments, they were exempted from the operation of the general regulation system, by sections 36, 13, and 11 of Regulations XII, XIII, and XIV of 1805. The exemption was allowed on the ground of expediency only; and it was held that there was nothing in the nature of British relations with the proprietors that would preclude their being brought under the ordinary jurisdiction of the British courts, if it should ever be thought advisable. The office of Superintendent of the Tributary States was established in 1814, and he was directed to endeavour to establish such control over the conduct of the *zamīndārs* as might prevent the commission of crimes and outrages. The only law, however, under which he appears to have been formally invested with any judicial authority was Regulation XI of 1816, by which he was empowered to dispose of claims to inheritance and succession among the Rājās. In 1821 the Government ruled that his interference should be chiefly confined to matters of a political nature; to the suppression of feuds and animosities prevailing between the Rājās of adjoining Mahāls, or between the members of their families, or with their subordinate feudatories; to the correction of systematic oppression and cruelty on the part of the Rājās or their officers; to the cognizance of any apparent gross violation by them of their duties of allegiance and subordination; and generally to important points, which might lead, if not attended to, to violent and

general outrage and confusion or to contempt of the paramount authority of the British Government. Several local Acts were passed, such as Act XX of 1850, for settling boundary disputes. But the whole system was changed in consequence of a ruling of the Calcutta High Court in 1882, which held that the Tributary States did not form part of British India. After prolonged correspondence the decision was accepted as final by the Secretary of State, and a special Act, called the Tributary Mahāls of Orissa Act (XI of 1893), was passed to indemnify certain persons and to validate acts done by them in the Mahāls, and to admit of certain sentences passed there being carried into effect in British India. The relations between the British Government and the Tributary States are governed mainly by the *sanads* granted in similar terms to all the chiefs in 1894. They contain ten clauses reciting the rights, privileges, duties, and obligations of the chiefs, providing for the settlement of boundary disputes, and indicating the nature and extent of the control of the Superintendent, who is also the Commissioner of the Orissa Division [1].

Except in Mayūrbhanj, which, under its present enlightened ruler, is governed on British lines, the States are administered by the chiefs in a more or less primitive fashion, generally with the help of a *dīwān*, who in many cases exercises full authority.

During the minority of a chief or in the rare case of his gross incapacity, the management of the State is undertaken by Government under the supervision of the Superintendent. Five States are thus now under Government management: namely, Narsinghpur, Dhenkānāl, Pāl Laharā, Nayāgarh, and Barāmbā.

The chief of each State has his own court with civil and criminal powers, which he exercises himself or delegates to his *dīwān* or manager. Under the terms of the *sanad* of 1894, he tries all criminal cases occurring in his territory, except those in which Europeans are concerned, and heinous offences, such as murder, homicide, dacoity, robbery, and torture, which he must commit to the Superintendent of the Tributary Mahāls, or to such of his assistants as the latter may direct. Sentences passed by the chiefs in criminal cases are regulated by the instructions issued from time to time by the Bengal Government, and, unless specially extended, may not exceed in the case of imprisonment a term of two years, in the case of fines a sum of Rs. 1,000, and in the case of whipping 30 stripes. In his criminal jurisdiction the Superintendent exercises the powers of a High Court in the Tributary States. In civil matters the chief has full authority, subject to the general control of the Superintendent. The three largest States have outlying subdivisions: namely, Mayūrbhanj two, Keonjhar two, and Dhenkānāl one. The

[1] Since the rearrangements of 1905, a separate officer has been appointed Political Agent for the Orissa States, who is subordinate to the Commissioner.

subdivisional officers are vested with limited revenue, criminal, and civil powers.

Owing to the general absence of subinfeudation and of large estates, land disputes are simple and few in number, and civil litigation is practically confined to petty suits regarding bonds and small trade transactions. Various kinds of oaths are in vogue for eliciting the truth. Criminal cases consist mainly of burglaries and thefts; dacoities take place occasionally, and murders are by no means uncommon, but riots seldom occur. The people are on the whole truthful, peaceable, and law-abiding, the only exception being the Pāns, who, being landless and indolent, live from hand to mouth and furnish the greater part of the jail population. Some of the aboriginal tribes are impulsive and excitable; and there have been several instances of risings, the most notable of which are the Bhuiyā rebellions of 1862 and 1891 in Keonjhar, and the Khond rebellion of 1894 in Nayāgarh.

No reliable statistics of the income and expenditure of these States are available, except for Mayūrbhanj and the five States under Government management. Such figures as have been obtained will be noticed in the separate account of each State. The principal source of income is the land revenue, which is supplemented by excise, stamps, judicial fines, and licence fees from various minor monopolies. In some of the States the forests yield a handsome profit. The excise revenue consists of the licence fees from out-stills, and for *gānja* and opium shops; these are settled yearly on the basis of auction sales, but there is a general want of supervision and very little is done to force up prices. Excisable articles are thus very cheap, and they are often smuggled into the adjoining British Districts. The chiefs formerly derived no revenue from *gānja*, which was allowed to grow wild; but in 1896 they were induced to put a stop to its cultivation and to introduce the Rājshāhi drug, under an arrangement which has proved lucrative to themselves, while it has effectually suppressed *gānja* smuggling. Some of the States have introduced the stamp and court fee rules. Stamps are supplied to them at cost price. The fees charged are below the rates prevailing in British territory. The miscellaneous revenue of the States is derived from several minor sources, such as fines and fees, *salāmis* or *nazarānas*, and licence fees for the sale of various forest products. According to a time-honoured custom, large sums are levied as *māgan*, or voluntary contributions, on the occasion of the marriage, birth, or death of a chief, or of some near member of his family.

The land settlement is extremely simple, and approximates closely to the system which existed in the Districts of Orissa proper under the Hindu dynasties. The abstract ownership vests in the Rājā or hereditary chief, but the right of occupancy remains with the actual

cultivator. So long as he pays his rent, his possession is undisturbed; but alienation by sale, gift, or mortgage is subject to the permission of the chief. No intermediate rights in the soil exist, except in the case of service tenures and other beneficiary grants. The revenue assessed on the holding of each ryot is based on measurement by a standard pole and a rough classification of the soil, or on an approximate estimate of the produce of the land; the assessment is generally revised every ten or fifteen years. Land revenue is collected through *sarbarāhkārs*, of whom there is one or more for each village. They are paid by commission ranging from 5 to 15 per cent., and in some cases have *jāgīr* lands besides. In some of the States the aboriginal races pay no revenue, but are assessed at a certain rate per house or per plough, which is subject to revision every three or five years. The revenue is supposed to bear some relation to out-turn, but the mode of calculation is often very crude. Formerly the whole or a part of the rent used to be realized in kind; but this led to much oppression and discontent, and cash payments have, under pressure from Government, now become the rule. On an average the rate per acre of rice lands varies from Rs. 1–2 to Rs. 2, and for miscellaneous crops from 2 annas to R. 1. A ryot's holding does not ordinarily exceed 5 acres.

The police of the Tributary States consisted in 1903–4 of 173 officers and 871 men. In Keonjhar and Mayūrbhanj European officers are in charge of the police force. The rural police is divided into two classes, *paiks* and *chaukīdārs*, both remunerated by small *jāgīr* grants. The former are employed on guard and escort duties, and form an ornamental appendage to a chief's following. They are sometimes a source of danger by reason of their number and influence, which the chiefs are now trying to reduce. The *chaukīdārs* are the rural police proper, and look after crime in the villages.

The States have their own jails in Barāmbā, Narsinghpur, Dhenkānāl, Daspallā, Mayūrbhanj, Tālcher, Keonjhar, Athmallik, and Athgarh; these are of masonry, but elsewhere they are merely mud huts within mud enclosures. They generally have sufficient accommodation, but are without proper sanitary arrangements. The prisoners are employed on extra-mural labour; discipline is badly enforced, and there is seldom any provision for exacting penal labour. Escapes are not uncommon. Long-term prisoners are sometimes sent to British jails, where the chiefs pay for their maintenance.

Education is very backward, but in late years there has been steady progress, especially in primary education. Only 3·3 per cent. (6·4 males and 0·2 females) could read and write in 1901. The States of Dhenkānāl and Mayūrbhanj, which are the most advanced, maintain a large number of schools, including a high school. The number of pupils in all the States increased from 14,505 in 1883 to 17,176 in 1900–1,

In 1903-4, 22,108 boys and 1,188 girls were at school, being respectively 15·1 and 0·8 per cent. of the children of school-going age. The number of educational institutions, public and private, in that year was 1,356, of which 20 were secondary, 1,130 primary, and 206 special schools. The total expenditure was Rs. 1,20,000, of which Rs. 20,000 was paid by Government, Rs. 54,000 by the several States, and Rs. 43,000 was met from fees. No special institutions exist for the aboriginal races, but primary schools have been opened in a few of their central villages, where 2,705 boys were under instruction in 1904.

All the States except Tigiriā maintain dispensaries in charge of civil hospital assistants or, in two cases, of Assistant Surgeons. In Dhenkānāl a female hospital, under a qualified lady doctor, was opened in 1900-1. In all the States combined, 23 dispensaries gave medical aid in 1904 to 684 in-patients and 103,177 out-patients, at an expenditure of Rs. 29,000, including the cost of establishment and medicines. The dispensaries are fairly well equipped, but they suffer from want of professional supervision. The people have not yet learnt to appreciate the European system of medical treatment, but in surgical cases they readily resort to the hospitals.

Inoculation has been stopped in the States, but vaccination has not yet been made compulsory, and is making very slow progress. Here, as in British Orissa, the people have strong prejudices against it, and so also have the chiefs, with the exception of the enlightened rulers of Mayūrbhanj, Nīlgiri, Hindol, and Athgarh, who have not hesitated to introduce vaccination in their own families. In 1903-4, in all the States (excluding Khandparā) 45,000 persons, or 23 per 1,000 of the population, were vaccinated. The work is generally carried on by paid or licensed operators under the supervision of the medical officer in charge of the State dispensary, and in some States sub-inspectors of vaccination have been appointed. A class has been opened in the Cuttack medical school, where each State sends one or more men annually to receive practical training in vaccination. The course lasts for six weeks, and the successful students are employed as vaccinators in their own States.

[Sir W. W. Hunter, *Statistical Account of Bengal*, vol. xix, pp. 195-314 (1877).]

Orissa Canals.—A system of canals situated chiefly in Cuttack District, Bengal, but serving also a portion of Balasore District. The canals derive their supply mainly from the MAHĀNADĪ river, but partly also from the BRĀHMANĪ and BAITARANĪ. The first proposal to employ the rivers of Orissa and Midnapore for irrigation was made by General Sir Arthur Cotton, who was deputed to visit Bengal in 1858 to advise on the control of the flood-waters of the Mahānadī. He recommended the construction of a complete system of irrigation and navi-

gation canals, following the principles then being carried out in the deltas of the Godāvari and Kistna. He estimated that an area of 3,516 square miles might thus be irrigated, and that navigation might be opened up between Orissa, Midnapore, and Calcutta, for a sum of 130 lakhs. Here, as elsewhere, Sir Arthur Cotton attached special importance to making the canals navigable; and he pointed out how completely Orissa was cut off from the rest of India, without roads, railways, or harbours, and traversed by a succession of formidable and unbridged rivers. In 1860 the East India Irrigation and Canal Company was formed for the purpose of carrying out the works in Orissa, and water was first supplied for irrigation in 1865. The works, however, were not sufficiently advanced to be of any real use in the terrible famine of 1866, though they supplied an excellent form of relief labour in the distressed Districts. Before this it had become evident that the original estimate would be largely exceeded; and as the company found difficulty in raising further funds, the Government of India purchased the whole of the works for the sum of 109 lakhs, and in 1869 the company ceased to exist.

From the first, irrigation in Orissa made very slow progress. Those who had enthusiastically quoted the success of the Madras irrigation schemes seem to have forgotten that there the annual rainfall does not exceed 40 inches, while in Orissa it amounts to 60 inches. The works, however, proceeded; and in 1873 it was decided to provide for an irrigable area of 1,781 square miles in Orissa (exclusive of Midnapore), at an estimated cost of 441 lakhs. This area was to include 781 square miles in the Balasore and Purī sections of the scheme, which had not then been put in hand and were soon after abandoned. The works completed up to 1902–3 commanded a cultivable area of 900 square miles, the maximum discharge of the canals being 6,058 cubic feet per second; and 22 miles of distributaries and minor channels were added to the system in 1903–4. They consist of seven weirs across river channels with an aggregate length of 3½ miles, constituting, with the canal head-sluices and entrance locks, the most extensive system of head-works of any canal system in India. There are four canals, with their respective distributaries: namely, the High-level canal; the Kendrāpāra canal, with its extensions, the Gobri and Patāmundai canals; the Tāldanda canal; and the Māchgaon canal.

The High-level canal was designed to provide a navigable trade route between Cuttack and Calcutta, and also to irrigate the country through which it passes. It starts from above the left flank of the weir across the Birūpā, one mile below the departure of that river from the main stream of the Mahānadī, and runs thence along the foot of the hills north-eastwards, through Cuttack and Balasore Districts. The original scheme was to carry the canal across the District of

Midnapore to meet the Hooghly river at Ulubāria, below Calcutta, a total distance from the starting-point of 230 miles. The section between Midnapore town and Ulubāria was opened throughout for traffic in 1873; but this is known as the MIDNAPORE CANAL, and forms an independent work distinct from the Orissa Canals system.

The Orissa delta is divided by the rivers which traverse it into two main sections. The tract between the main stream of the Mahānadī and the Brāhmanī is irrigated by the Patāmundai canal on the north and the Kendrāpāra canal on the south, the Gobri canal forming a connecting link between them to the east. Both these systems draw their supply of water from the south flank of the anicut across the Birūpā, which also feeds the High-level canal. Another anicut across the main stream of the Mahānadī feeds the Tāldanda and Māchgaon canals, which water the north and south edges of the tract between the Mahānadī and Kātjurī. All these canals maintain a high level along the banks of the rivers, which are always higher than the intermediate alluvial tracts.

Canal-irrigation was first ready in 1865; but cultivators were slow to avail themselves of it, as they were afraid that irrigation would be made an excuse for the enhancement of rents and revenue. More than one proclamation was published to allay their apprehensions, but a more effective inducement to take water was the gradual reduction of the rate from Rs. 5 and Rs. 3 to Rs. 1-8 per acre. The rainfall is generally sufficient to bring the crops to maturity, though it fails occasionally, so that artificial irrigation is necessary only in exceptionally dry years. The policy adopted has been to induce the cultivators to take long leases on favourable terms; and this is proving successful, the area irrigated having steadily increased, until in 1903-4 it reached 328 square miles. There were in that year altogether 205 miles of main canals for irrigation and navigation, 96 miles of canals for irrigation only, and 1,166 miles of distributaries and minor channels. The main canals are navigable, and the estimated value of the cargo carried in 1902-3 was 63 lakhs, the tolls realized aggregating Rs. 69,000. The capital outlay up to March 31, 1904, was 265 lakhs, and in 1903-4 the gross revenue was 4·3 lakhs and the net revenue Rs. 45,000.

The Orissa Canals have never paid their way. The water rate was until recently only Rs. 1-8 per acre, and the receipts for both navigation and irrigation barely cover the working charges and do not touch the interest, the annual charges for which exceed 10 lakhs. The water rate has recently been increased to Rs. 1-12 per acre, with the object of rendering the canals self-supporting, and the receipts rose from 3·5 lakhs in 1901-2 to 4·3 lakhs in 1903-4. During the same period the traffic on the canals increased, though owing to the reduction of tollage rates the actual earnings were not greater.

Orissa Coast Canal.—A navigable canal situated chiefly in Balasore District, but partly also in Midnapore District, Bengal, forming a continuation of the HIJILĪ TIDAL CANAL. The canal, which has a length of 130 miles, connects the Rasūlpur river with the Subarnarekhā, and proceeds thence to the Matai and Dhāmra rivers. The canal was commenced in 1880, and opened for traffic in 1885. The estimated value of the cargo carried in 1902–3 was 19·4 lakhs. There has been a great falling off in the navigation receipts since the opening of the Bengal-Nāgpur Railway, to which most of the rice and other goods traffic has been diverted. The capital outlay up to March 31, 1904, was 44·8 lakhs; the gross revenue during the year was Rs. 34,000, and there was a loss on the year's working of Rs. 32,000.

Osmānābād District (formerly called Naldrug).—District in the west of the Hyderābād State, bounded by the Bombay Districts of Ahmadnagar and Sholāpur on the north, west, and south; by Bhīr and Bīdar Districts on the north and east; by the Akalkot State of Bombay on the south; and by Gulbarga District on the south-east. It encloses the detached Bārsi *tāluk* of Sholāpur District, and lies between 17° 35′ and 18° 40′ N. and 75° 16′ and 76° 40′ E., with a total area of 4,010 square miles; but the area of the *khālsa* and *sarf-i-khās* (crown) lands is only 2,627 square miles, the rest being *paigāh* and *jāgīr*. A range of hills, which enters the District at the north-west corner from Ahmadnagar, and continues to the south-east, divides it into two portions: a plateau to the north-east and east, and lowlands to the west, south-west, and south. The *tāluks* of Wāsi, Owsa, Kalam, and parts of Tuljāpur, Osmānābād, and Naldrug are situated on the plateau; the remainder of the District on the lowlands. The general slope of the plateau is from south-west to north-east. The land rises from Tuljāpur towards Osmānābād; thence it begins to descend gradually towards the north-east, terminating in the valley of the river Mānjra.

Physical aspects.

The most important river is the MĀNJRA, which runs due east along the northern boundary as far as the north-eastern corner of the Owsa *tāluk*, where it takes a southerly direction before entering Bīdar District. Its length in Osmānābād is about 58 miles. Other streams which traverse portions of the District are the Sīna and its tributary the Kherī, the Tirna, and the Borna, which all run in a south-easterly direction, the Sīna forming part of the boundary between Osmānābād and Bhīr District.

The geological formation is the Deccan trap. There is no forest in the District, and the trees that are found consist of *babūl* (*Acacia arabica*), *nīm*, mango, and several species of *Ficus*.

The country, being devoid of forests, contains no large game of any

note; but antelope and hares are found in small numbers, as are also wolves, hyenas, and wild hog. Among game-birds, partridges, quail, and wild pigeons are common; and where there is a tank, wild duck may be seen during the cold season.

Climatically, the District may be divided into three portions: the first, containing the Naldrug and Owsa *tāluks*, is hot but dry; the second, consisting of Tuljāpur and Osmānābād, is cool and somewhat damp; while the third comprises Wāsi, Kalam, and Parenda, the climate being humid. Generally speaking, the temperature of the plateau is much pleasanter than that of the plain.

The annual rainfall for the twenty-one years ending 1901 averaged 33 inches. The amount received in 1897 (14 inches) and in 1899 (20 inches) was abnormally scanty, and resulted in the great famine of 1900.

History.

The District has been under Muhammadan rule since the beginning of the fourteenth century, when it was annexed to the empire of Delhi by Alā-ud-dīn Khiljī. On the foundation of the Bahmani kingdom, it fell to that power, and when that monarchy in turn dissolved, to the Sultāns of Ahmadnagar and Bijāpur. The conquest of the Deccan by Aurangzeb reunited it to Delhi, till the foundation of the Hyderābād State in the early part of the eighteenth century. It was ceded to the British Government with the Raichūr Doāb under the treaty of 1853, but was restored to the Nizām in 1860.

The District contains six places of archaeological interest. The fort of NALDRUG, a fortified town on the Bori river, and the head-quarters of the *tāluk* of that name, belonged to a Hindu Rājā during the fourteenth century. The Jāma Masjid in the Owsa *tāluk* is built in the Bijāpur style of architecture, with a dome and façade of cusped arches. Groups of caves known as the Dābar Lena, Chamār Lena, and Lāchandar Lena lie around the town of OSMĀNĀBĀD (Dhārāseo), the first-mentioned group being Jain and Vaishnava excavations. Roughly the caves may be assigned to the period A.D. 500 to 650. Hasangaon, 40 miles north-west of Naldrug, contains two large caves in a solitary hill, which were Brāhmanical rock shrines. Parenda, an old fortress, 64 miles north-west of Naldrug, was erected by Mahmūd Gāvān, the celebrated minister of the Bahmani Sultān, in the fifteenth century. TULJĀPUR, a town 20 miles north-west of Naldrug, is a famous place of Hindu pilgrimage, and contains a temple dedicated to the goddess Bhavāni. There are very interesting Buddhist remains at THAIR (Ter), 12 miles north-east of Osmānābād, which has been identified as the site of Tagara, a city of great antiquity mentioned by Ptolemy.

The number of towns and villages in the District, including the

large *jāgīrs*, is 866. The population at the last three enumerations was: (1881) 543,402, (1891) 649,272, and (1901) 535,027. The towns are OSMĀNĀBĀD, the head-quarters, TULJĀPUR, THAIR, OWSA, LĀTŪR, and MORAM. About 89 per cent. of the population are Hindus, and 84 per cent. of them speak Marāthī. The following table exhibits the principal statistics of population according to the Census of 1901:—

Population.

Tāluk.	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Osmānābād	380	2	78	72,176	189	− 16.5	Not available.
Kalam	303	...	70	38,030	125	− 27.1	
Wāsi	342	...	78	47,484	138	− 26.9	
Owsa	370	2	104	61,436	166	− 19.4	
Tuljāpur	403	1	71	55,385	137	− 16.2	
Naldrug	353	1	57	53,487	151	− 8.1	
Parenda	476	...	106	56,912	119	− 16.9	
Jāgīrs, &c.	1,383	...	296	150,117	118	− 16.4	
District total	4,010	6	860	535,027	133	− 17.4	16,579

In 1905 Wāsi was merged in Kalam, and Naldrug in Tuljāpur. In its present form the District thus consists of only five *tāluks*—Osmānābād, Kalam, Tuljāpur, Owsa, and Parenda—besides the two large *paigāh ilākas* of Ganjoti and Lohārā, and the *jāgīrs* of Bhūm and Wālwad.

The most numerous caste is that of the cultivating Kāpus (Telugu) or Kunbis (Marāthā), who number 205,000, or 38 per cent. of the total. The Dhangars or shepherds number 28,700, the Mahārs or village menials about 51,000; and the Māngs or Chamārs, leather-workers, 36,000. The Vānīs or trading castes number 42,000 altogether, and the Brāhmans 18,000. The population engaged in agriculture is 310,000, or nearly 58 per cent. of the total. Christians in 1901 numbered 50, all of whom were natives.

Agriculture.

The entire District is situated in the trap area, and most of its soil consists of the fertile *regar* or black cotton soil, interspersed with red and white or sandy soils. In the *tāluks* of Osmānābād, Kalam, Wāsi, and Parenda the black cotton soil predominates, favouring the cultivation of *rabi* or cold-season crops to a larger extent than in the remaining *tāluks*, where reddish and sandy soils are met with to a greater extent, producing chiefly the *kharīf* or rainy season crops. Next to the *regar* in fertility is the *masab* or mixture of white and reddish soils, and last comes the *kharab* or sandy soil. *Regar* produces white *jowār*, gram, wheat, and cotton; in the *masab* soils yellow *jowār*, *bājra*, and pulse are grown,

while the *kharab* is generally utilized for garden produce, which needs heavy manuring in order to produce a good crop, the soil being naturally poor. The soils at the foot of the range of hills running across the District are especially fertile, containing the rain-washed detrital matter from the rocks above, and having all the properties of alluvium.

The tenure of lands is mainly *ryotwāri*. In 1901, out of a total area of 2,627 square miles of *khālsa* and crown lands, 1,813 were cultivated, of which only 76 were irrigated. Cultivable waste and fallows occupied 648 square miles, while 166 were not available for cultivation. The staple food-grain is *jowār*, grown on 70 per cent. of the net area cropped. Wheat, rice, and *bājra* are next in importance, the areas under each being respectively 75, 37, and 29 square miles. Cotton is grown in all the *tāluks*, and the total area occupied by it is about 56 square miles. Sugar-cane is raised in small quantities with well-irrigation, the area under this crop being slightly less than 10 square miles.

Since the last settlement in 1883, which resulted in the taking up of all the available lands by the ryots, no extension of holdings has been possible. The ryots have shown no interest in the introduction of new varieties of seed or of improved agricultural implements.

No particular breed of cattle is characteristic of the District, but those found are strong and robust, and well suited for deep ploughing, which is essential to the heavy loamy and argillaceous soils prevalent. Sheep and goats of the common kind are reared. Ordinary ponies are to be had for from Rs. 20 to Rs. 30; but the better sort, well-known for their staying powers and sure-footedness, fetch as much as Rs. 100. For some years past, the State has kept two Arab stallions at Osmānābād and one at Parenda, for the purpose of improving the local breed.

The irrigated area amounts to only about 76 square miles, supplied by wells, of which 8,800 are in good repair. Such tanks as exist are used for drinking purposes only, while the beds of the rivers are too low to permit of their water being used for cultivation.

There are no minerals of any economic value, beyond the ordinary granite and basaltic rock, used in building and road-metalling. Near Katri, Kāmta, and Wadgaon in the Osmānābād *tāluk*, reddish earth is found, which is used by the Hindus for plastering floors.

Trade and communications.

No important industry is carried on in the District. Coarse cotton cloth and *dhotīs*, *sārīs*, and *cholīs* used to be manufactured locally, but for some years past cloth of all kinds and yarn have been imported at cheaper rates. The shepherds usually manufacture blankets from the wool of their sheep, which are sold at from Rs. 2 to Rs. 3 apiece. At Lātūr in the Owsa *tāluk*, which is a large trade centre, a small ginning-mill was erected in 1889, and two more have been started since 1901. There

are no regular tanneries, but the Chamārs generally prepare leather for the water-buckets, largely used for irrigation purposes.

The chief exports consist of *jowār*, other cereals and pulses, cotton, oil-seeds and oil, chillies, cattle, sheep, bones and horns, tobacco, leather, and *tarvar* bark. The principal imports are salt, salted fish, opium, spices, silver, gold, copper and brass utensils, refined sugar, iron, kerosene oil, sulphur, raw silk, and silk and cotton cloth of all kinds.

The chief centre of commerce is Lātūr, from which almost the whole of the imported articles are distributed throughout the District. Osmānābād is next in importance. The principal trading castes are the Vānīs, Mārwāris, Komatis, and Bhātias, who also engage in banking business. In all the *tāluks* weekly bazars are held, where a brisk trade is carried on.

The Great Indian Peninsula Railway line passes through a minute portion of the *tāluk* of Tuljāpur. Bārsi, in the Bombay District of Sholāpur, on the Bārsi Light Railway, is the nearest station to the District head-quarters, from which it is 32 miles distant. There are two stations on the same line at the villages of Sendri and Uptai in the Parenda *tāluk*.

The total length of roads in the District is 272 miles, of which 144 miles are metalled and 128 miles unmetalled. The principal roads are: Lātūr to Doki, Yermala to Amba in Bhīr District, Bārsi to Sholāpur, Osmānābād to Tāndulwādi, Parenda to Bārsi, and Naldrug to Tāndulwadi.

Famine.

No reliable records exist of any famines prior to the restoration of the District by the British in 1860, with the exception of what has been said by Colonel Meadows Taylor in his *Story of My Life*, regarding the distress that prevailed during 1854-5 owing to the influx of famine-stricken people from the adjoining tracts. The great famine of 1877-8 affected one *tāluk* only, while in 1896-7 a portion of the District suffered. In 1897 the local rainfall was less than half the usual quantity, and in 1899 less than two-thirds; and the District, which had suffered from previous failure of crops, was among those most severely affected during the famine of 1900. Both the *kharīf* and the *rabi* crops failed, and at one time about one-fifth of the total population were in receipt of relief. An attack of cholera supervened, and the Census of 1901 showed a decrease of 17·3 per cent. in the population. The District also lost about 40 per cent. of its cattle, and the total cost of the famine to the State amounted to 22 lakhs.

Administration.

The District forms two subdivisions: one comprising the *tāluks* of Kalam, Owsa, and Parenda under the Second Tālukdār; and the other consisting of the *tāluks* of Osmānābād and Tuljāpur under the Third Tālukdār, the First

Tālukdār having a general supervision over the work of all his subordinates. Each *tāluk* is under a *tahsīldār*.

The District civil court is presided over by a Judge styled the *Nāzim-i-Dīwāni*. The subordinate civil courts are those of the *tahsīldārs* of Osmānābād, Tuljāpur, and Parenda, and of a Munsif for the *tāluks* of Owsa and Kalam. The First Tālukdār is the chief magistrate, and the District Civil Judge is also a joint-magistrate, who exercises powers as such in the absence of the First Tālukdār from head-quarters. The Second and Third Tālukdārs and the *tahsīldārs* exercise magisterial powers of the second and third class. Serious crime is not heavy in ordinary years, but in times of scarcity dacoities and cattle-thefts increase in proportion to the severity of the season.

Nothing is known of the revenue history of the District, beyond the fact that Malik Ambar's revenue system was in force from the beginning of the seventeenth century. His settlement was based upon an actual survey of the lands, and upon the productiveness of the soil. Villages were formerly leased by the State to revenue farmers, who received $1\frac{1}{2}$ annas per rupee for collection. So far as is known, the revenue has always been collected in money and never in kind. In 1866 the subdivisions of the District were formed, though they have been much altered since by frequent transfers. In 1883 a revenue survey was completed, and an assessment fixed for thirty years. The rates fixed approximated to those in the adjoining Bombay Districts of Ahmadnagar and Sholāpur. The enhancement of revenue which resulted from the survey was 1·2 lakhs, or over 11 per cent., the revenue having risen from 10·22 to 11·4 lakhs. The average assessment on 'dry' land is R. 1–0 (maximum Rs. 2–0, minimum R. 0–1), and on 'wet' land Rs. 3–0 (maximum Rs. 5–0, minimum R. 1–0).

The land revenue and total revenue of the District for a series of years are given below, in thousands of rupees:—

	1881.	1891.	1901.	1903.
Land revenue . .	10,21	11,67	11,80	11,77
Total revenue . .	10,41	12,79	22,19	12,71

Since 1888 a local cess of one anna in the rupee has been levied on land revenue for local purposes. Boards have been formed in every *tāluk*, except Osmānābād, consisting of official and non-official members, with the *tahsīldārs* as chairmen. A District board with the First Tālukdār as president supervises the working of the *tāluk* boards, as well as the Osmānābād municipality. A small conservancy establishment is maintained at all the *tāluk* head-quarters. The local cess in 1901 yielded Rs. 87,500, one-fourth of which was set apart for local works and the municipal establishments.

The First Tālukdār is the head of the police, with a Superintendent (*Mohtamim*) as his executive deputy. Under him are 8 inspectors, 41 subordinate officers, 376 constables, and 35 mounted police. These are distributed among 16 police stations, and guard the *tāluk* treasuries. A small special police establishment, called the *rakhwāli*, guards carts carrying merchandise, and any cattle or animals that bivouac at certain appointed places. This force is paid out of funds collected from the cartmen and owners of cattle at fixed rates. There is a District jail at Osmānābād, besides lock-ups in the outlying *tāluks*. Only short-term prisoners are now kept in the District jail, those whose terms exceed six months being sent to the Central jail at Gulbarga.

Osmanābād occupies a fairly high position as regards the literacy of its population, of whom 3·1 per cent. (6 males and 0·12 females) could read and write in 1901. There were 44 public educational institutions in 1903. Of these, 12 were State and 32 local board schools. The number of pupils under instruction in 1881, 1891, 1901, and 1903 was 947, 2,055, 3,407, and 2,839 respectively, including 74 girls in 1903; no information is available regarding private schools. Of the 12 schools managed by the Educational department, 3 were girls' schools with 77 pupils, and 5 were secondary boys' schools. The first State school was opened in 1866, and the local board schools were started after the establishment of the local boards in 1888. The total amount spent on education in 1901 was Rs. 26,000, of which Rs. 16,600 was met from State funds and the remainder from Local funds; of this sum 52 per cent. was devoted to primary schools. The fee receipts for the year were Rs. 1,102.

The District has one hospital and three dispensaries, with accommodation for 40 in-patients. In 1901, 23,900 cases were treated, of whom 104 were in-patients, and 391 operations were performed. The expenditure was Rs. 10,800, of which Rs. 9,400 was paid by the State, and the balance by the local boards.

In 1901 the number of persons successfully vaccinated was 1,516, or 3 per 1,000 of the population. Vaccination is gaining favour with the people, though slowly.

Osmānābād Tāluk.—Crown *tāluk* in the centre of Osmānābād District, Hyderābād State, formerly known as Dhārāseo. Its area, including *jāgīrs*, is 417 square miles; and the population in 1901 was 77,533, compared with 92,829 in 1891, the decrease being due to the famine of 1900. It contains two towns, OSMĀNĀBĀD (population, 10,607), the head-quarters of the District and *tāluk*, and THAIR (7,327); and 87 villages, of which 9 are *jāgīr*. The land revenue in 1901 amounted to 1·5 lakhs. Osmānābād is composed wholly of *regar* or black cotton soil.

Osmānābād Town.—Head-quarters of the District and *tāluk* of

Osmānābād, Hyderābād State, situated in 18° 11′ N. and 76° 3′ E., 43 miles north of Sholāpur and 32 miles east of Bārsi town. Population (1901), 10,607. It lies in the Bālāghāt, and was formerly known as Dhārāseo. The offices of the First, Second, and Third Tālukdārs, the District engineer, Customs Superintendent, and the District civil court are all located here. Besides these, Osmānābād contains several schools, a State and a British sub-post office, and a dispensary. While the District was temporarily ceded to the British, from 1853 to 1860, the head-quarters were removed here from NALDRUG, owing to the healthy climate of the place. It is a great centre of trade. Two miles north-east of the town is a group of seven caves, four of which are Jain, while the others are probably Vaishnava.

Osmānnagar.—A *tāluk* formerly in Nānder District, Hyderābād State, with an area of 290 square miles. The population in 1901, including *jāgīrs*, was 37,667, compared with 48,355 in 1891, the decrease being due to the famine of 1900. The land revenue in 1901 amounted to 1·2 lakhs. In 1905 the *tāluk* was broken up, part being transferred to Biloli, and part to Kandahār.

Ottappidāram.—North-east *tāluk* of Tinnevelly District, Madras, lying between 8° 41′ and 9° 22′ N. and 77° 41′ and 78° 23′ E., with an area of 1,072 square miles. The population in 1901 was 358,568, compared with 342,145 in 1891; the density is nearly 335 persons per square mile. The *tāluk* contains two towns, TUTICORIN (population, 28,048) and ETTAIYĀPURAM (8,788); and 394 villages. The demand for land revenue and cesses in 1903–4 amounted to Rs. 3,45,000. By far the largest portion is *zamīndāri* land, the estates comprised in it including ETTAIYĀPURAM, the biggest in the District. It is almost entirely a wide plain of black cotton soil, though to the west and south a considerable area is red sand and loam. Rainfall is very scanty and there is little 'wet' cultivation, but cotton is grown very largely and sent to Tuticorin for export.

Otūr.—Village in the Junnar *tāluka* of Poona District, Bombay, situated in 19° 16′ N. and 73° 59′ E., about 50 miles north-north-west of Poona city. Population (1901), 6,392. Towards the close of Marāthā rule the tract of country round Otūr was much desolated by inroads of Khāndesh Bhīls, for security against whom a high fort was built at Otūr. In the neighbourhood are two temples: one dedicated to Keshav Chaitanya, the *gurū* or spiritual preceptor of the celebrated Tukārām; and the other a shrine of the god Mahādeo, in whose honour an annual fair, attended by about 2,000 persons, is held in August or September. Otūr contains one boys' school with 287 pupils and one girls' school with 54.

Ouchterlony Valley.—A beautiful valley in the Gūdalūr *tāluk* of the Nīlgiri District, Madras, lying between 11° 23′ and 11° 30′ N. and

76° 26′ and 76° 33′ E., 39 square miles in extent, and at an average elevation of 3,000 feet above sea-level, below the south-western wall of the Nīlgiri plateau. It takes its name from Colonel J. Ouchterlony, R.E., who made the first survey of the Nīlgiris in the fourth decade of the last century and wrote a valuable memoir upon the District. The valley is now an important centre of coffee, tea, and cinchona cultivation, though the whole neighbourhood has suffered severely from the depression in the planting industry and few of the many Europeans who once resided in it remain. The area under coffee is nearly 4,000 acres, the Guynd estate alone containing an unbroken block of 800 acres in full bearing. The population in 1901 was 5,265.

Oudh (*Awadh*)[1].—A British Province, forming part of the UNITED PROVINCES, lying between 25° 34′ and 28° 42′ N. and 79° 41′ and 83° 8′ E., with an area of 23,966 square miles. Population (1901), 12,833,077. The name is a corruption of that of the ancient city of Ajodhyā (Ayodhyā), which became the seat of a local governor under the early Muhammadan rulers. Oudh is bounded on the north by the State of Nepāl, and on all other sides by the Province of Agra. The Gorakhpur and Benares Divisions lie on the east, the Bareilly and Agra Divisions on the west, and the Allahābād Division on the south. The river Ganges forms the greater part of the south-western boundary.

Physical aspects.

Oudh includes portions of two of the great natural divisions of Upper India. The three northern Districts of Kherī, Bahraich, and Gondā stretch up into the submontane tract lying below the Himālayas, while the remainder of the Province lies in the central portion of the Gangetic plain. The northern boundary of Bahraich and Gondā runs for 60 miles along the low hills which mark the first rise above the level of the plain; but the submontane tract or *tarai* is chiefly distinguished by its greater slope and excessive moisture, due to a heavier rainfall and the drainage from the outer ranges of the Himālayas. In the northern portion of the Province there are large areas of forest land. Geologically, the whole of Oudh is classified as Gangetic alluvium. No rock or stone is found except *kankar* (nodular limestone), which is used for metalling roads. Gold is obtained in very small quantities by washing sand in the rivers in the north of the Province. Salt was extensively manufactured during native rule, but the industry has been prohibited for many years. The flora is described in the article on the UNITED PROVINCES.

The country slopes from north-west to south-east, and the drainage follows the same line, being divided into two great river systems, those of the GOGRA and GANGES, which ultimately unite in Bengal. The

[1] This article deals only with matters in which Oudh differs from the rest of the UNITED PROVINCES, to the article on which reference should be made for other details.

Province may thus be divided into two tracts separated by the Gogra. On the north-east the Districts of Bahraich and Gondā form a triangular area, a portion of which is drained by the Rāptī, with a course roughly parallel to that of the Gogra, into which it falls in Gorakhpur District, while the greater part of the drainage is carried directly into that river. The rest of the Province is roughly rectangular in shape, and lies between the Gogra and the Ganges. Through the centre of this portion flow the Gumtī and its southern tributary the Sai, which carry off most of the drainage into the Ganges. It is only in the northern Districts of Kherī and Sītāpur that the Gogra obtains an increase to its volume through the Sārdā and its branches. The numerous shallow ponds or *jhīls*, of which the Dāhar Lake is the most important, form a more valuable source for irrigation than the rivers.

The general aspect of the Province, except during the hot season when the land is bare, is that of a rich expanse of waving and very varied crops, interspersed with numerous ponds or shallow lakes, mango groves, and bamboo clumps. The villages lie thickly scattered, consisting of low cottages surrounded by patches of garden-land. The dense foliage of mango plantations marks the site of almost every little homestead. *Mahuā* (*Bassia latifolia*), plantains, guavas, and jack-fruits add further beauty to the village plots. The scenery, as a whole, has few claims to attention, except so far as trees and water may occasionally combine to produce a pleasing effect; but the varied colouring of the ripe crops, the sky, and the groves or buildings, often charm the eye under the soft haze of a tropical atmosphere.

History.

The legendary accounts of Oudh centre round Ajodhyā or Awadh, the city from which the Province takes its name. This was the capital of Kosala, the kingdom of Dasaratha of the Solar race, father of Rāma, from which the hero went forth into exile with his wife Sītā and his brother Lakshmana, and to which he returned in triumph after the defeat of Rāvana, king of Ceylon. Many places in Oudh are visited by pilgrims on appointed days as connected with the story. After the death of Rāma the kingdom was divided into Northern Kosala, ruled by his son, Lava, at Srāvastī; and Southern Kosala, ruled by another son, Kusa. No approximate date can be assigned to whatever may be historical in the story of the Rāmāyana.

In the Buddhist literature of the centuries immediately before the Christian era, Srāvastī figures as an important place at which Gautama spent many years. Its exact site is disputed, but the kingdom of which it was the capital certainly included part of Oudh north of the Gogra. The rest of the Province still preserves many remains of the Buddhist faith, which have not been thoroughly examined. An inscription of

the twelfth or thirteenth century found at SET MAHET in Gondā and Bahraich Districts shows that Buddhist tenets were held as late as that date, but the Chinese pilgrims in the fifth and seventh centuries lament that the faithful were even then few.

Little more is known of Oudh up to the rise of the Guptas of Magadha, who gradually extended their dominions westward from Patna in the fourth century A.D., and according to the Purānas took Sāketam or Ajodhyā. The once populous tract north of the Gogra relapsed into jungle, and the ancient city of Srāvastī was deserted by the seventh century.

According to tradition, the Thārus who are still found in the *tarai* descended from the hills in the eighth or ninth century; and legend tells of a line of Somavansi kings, the last of whom, Suhil Deo, fought with Saiyid Sālār. In these dark ages, while the Rājput clans were rising into importance, Western Oudh must have been subject to the rulers of Kanauj or Katehr, and Eastern Oudh to Benares, till this was absorbed in the great kingdom of Kanauj.

The raid of Mahmūd Ghaznivid, in 1018–9, extended from Kanauj through part of Southern Oudh; and there are many tombs in the Province, said to be those of warriors who fell in the expedition of his canonized nephew, Saiyid Sālār, the tomb of the saint himself being at Bahraich. It was nearly two centuries later, however, before Muhammad Ghorī's general, Kutb-ud-dīn, finally defeated Jai Chand of Kanauj in 1194, and thus broke up the last great Hindu kingdom. Not long afterwards the Bhars, a dark-skinned aboriginal race still existing as a low caste, rose into importance in Southern Oudh and in Bundelkhand, but were crushed in 1247; and the history of the Province for nearly 500 years is a part of the general history of the kingdom of Delhi. There were local governors at Ajodhyā, Bahraich, Sandīla, Mānikpur, and other places, who often found it difficult to maintain their authority; for in Oudh, as in Bundelkhand, the Hindus were never thoroughly subdued, as they were at an early date in the Doāb and later in Rohilkhand. In 1394 Khwāja Jahān was made governor of Kanauj, Oudh, Karā, and Jaunpur, and soon afterwards assumed independence. For more than eighty years the Province formed part of the great Sharkī (or Eastern) kingdom of Jaunpur, and shared in the struggle with Delhi, which ended with the fall of Jaunpur in 1478. In the south-western corner Tilok Chand, head of the Bais Rājputs, gradually rose to power and became the greatest noble in Oudh, with a large tract owning his sway, known as BAISWĀRĀ.

After Bābar had gained a footing in Hindustān by his victory at Pānīpat in 1526, and had advanced to Agra, the defeated Afghān house of Lodī still occupied the Central Doāb, Oudh, and the eastern Districts of the present United Provinces. In 1527 Bābar, on his

return from Central India, defeated his opponents in Southern Oudh near Kanauj, and passed on through the Province as far as Ajodhyā, where he built a mosque in 1528, on the site renowned as the birthplace of Rāma. The Afghāns remained in opposition after the death of Bābar in 1530, but were defeated near Lucknow in the following year. The Mughal power was, however, still far from secure; and Sher Khān (afterwards Sher Shāh), the new leader of the Afghāns, gradually increased his influence till in 1540, by his victory at Kanauj, he compelled Humāyūn to fly from India. For five years the country was at rest; but on the death of Sher Shāh in 1545 the Afghān power began to fall to pieces, and Humāyūn returned in 1555. Under Akbar a redistribution of the empire into provinces took place. Oudh was formed into a *Sūbah* or province, containing five *sarkārs* or divisions and thirty-eight *mahāls* or *parganas*. The provincial forces consisted of 7,640 cavalry, 168,250 infantry, and 59 elephants. Awadh or Ajodhyā was then one of the principal cities in India, and Lucknow was rising in importance. Akbar's government was not established without a struggle; and in 1565 the *jāgīrdārs* Iskandar Khān of Ajodhyā and Khān Zamān of Jaunpur revolted and took Lucknow, but were soon defeated. It is noticeable that in the list of Akbar's grandees only three belonged to Oudh, one of whom was a Hindu, the celebrated Todar Mal.

The rule of the Mughal emperors was uneventful for Oudh during the next 150 years, when the chief centre of interest lay in the Deccan. Local prosperity may be inferred from the rise in revenue, which was 50 lakhs in 1594 and 83 lakhs about 1720, while the measured area had increased from 9,933 to 18,577 square miles. In the struggles for the succession to Shāh Jahān and Aurangzeb Oudh played no important part. When, however, the Mughal empire fell to pieces, small states arose, the rulers of which obtained practical independence. Among these Oudh took the first place; and its importance dates from the appointment about 1724 of Muhammad Amīn, originally a merchant from Khorāsān, to be governor of Oudh, with the titles of Saādat Khān and Burhān-ul-mulk. The new governor was a great soldier, who soon reduced those of the local Hindu chieftains who opposed him. He built a house a few miles west of Ajodhyā, round which grew up the new town of Fyzābād; but most of his time was spent elsewhere, fighting at one time against the Marāthās and at another against Nādir Shāh, or fulfilling the duties of his office as Wazīr of the empire. Deputies managed his two provinces of Oudh and Allahābād, and on the whole ruled well under his guidance.

He was succeeded in 1739 by his nephew and son-in-law, Safdar Jang, who had been his deputy at Fyzābād, and was an able statesman. Under both these rulers the Province enjoyed great prosperity and

forts, wells, and bridges were constructed. In 1745 Safdar Jang quarrelled with Alī Muhammad, who was then consolidating the Rohillas on the western boundary of Oudh; and thus commenced the long struggle which was to end in the addition of Rohilkhand to Oudh. When the old Nizām of the Deccan died in 1748, he was succeeded in his office as Wazīr of the empire by Safdar Jang. Then followed a war with the Pathān chief of Farrukhābād, which resulted in Safdar Jang's invoking the assistance of the Marāthās, who afterwards became a menace to his own province. The immediate result, however, was that the Farrukhābād territory became practically dependent on Oudh. In 1754 the emperor Ahmad Shāh deprived Safdar Jang of his office as Wazīr, and aided by the Marāthās successfully drove him back to Oudh when he attempted, with the help of the Jāts, to seize Delhi. In the same year Safdar Jang died and was succeeded by his son, Shujā-ud-daula, who removed the capital for a time to Lucknow, which had first become a considerable town in the time of Sher Shāh. He was engaged almost at once in conjunction with the Rohillas in repelling the Marāthās, who had been summoned by the new Wazīr, Ghāzī-ud-dīn, and were now looked on as a common enemy of the states of Hindustān. When the prince Alī Gauhar (afterwards Shāh Alam II) escaped from Delhi, he was received by Shujā-ud-daula and advised to proceed against Bengal, where the British power was increasing. In 1761 Shujā-ud-daula fought by the side of the other Muhammadan chiefs in the great battle at Pānīpat, and soon afterwards Shāh Alam gave up his fruitless contests with the British, and retired to Allahābād. Here he was under the control of Shujā-ud-daula, who was appointed to the office of Wazīr, which henceforth became hereditary in his family. After the massacre at Patna in 1763, Mīr Kāsim and his lieutenant, Sumrū, fled to Oudh and were joined by the emperor and Shujā-ud-daula; but the allied troops failed to take Patna and were completely defeated by the British at Buxar in 1764. Shāh Alam, who had taken no part in the fighting, went over to the British, while Shujā-ud-daula fled through Fyzābād and Lucknow to Bareilly. He obtained some help from the Pathāns, and even from the Marāthās, and again faced the British in 1765 near Jājmau in Cawnpore District, but suffered defeat a second time. By the treaty then proposed, the British were to obtain the greater part of the present Benares Division, and Shāh Alam was to be placed in possession of the rest of Oudh. The Court of Directors, however, refused to sanction this arrangement, and everything was restored to Shujā-ud-daula, except the districts south of the Ganges (now Cawnpore, Fatehpur, and Allahābād), which were made over to the emperor. Shujā-ud-daula also undertook to pay the British a contribution of 50 lakhs. About this time he moved his court back to Fyzābād, where he built a fort and greatly increased the

prosperity of the city. In 1769 the Marāthās returned to Hindustān and assumed a most threatening attitude. Two years later, the emperor disregarded the advice of the British and joined them, leaving Allahābād in charge of Shujā-ud-daula. The danger to Oudh and the British was imminent, and when the Marāthās extorted a grant of the Allahābād territory from Shāh Alam, British troops were sent to occupy Chunār and Allahābād. The Marāthās pressed on, and in 1773 Sir Robert Barker marched to guard the frontiers of Oudh and Rohilkhand under a guarantee of a lakh of rupees a month. British troops aided in driving the Marāthās out of Rohilkhand, and later in the year Warren Hastings met Shujā-ud-daula at Benares. The result was the cession to the Wazīr of the Allahābād territory, which was taken from the emperor because of his grant of it to the Marāthās, while the Wazīr paid the Company 50 lakhs and undertook to pay 25 lakhs a year, besides the cost of a brigade of British troops to be stationed on the borders of his territories. A permanent British Resident was appointed for the first time at his court, and these arrangements may be said to mark the conversion of Oudh into a state dependent on the Company. Shujā-ud-daula now made fresh efforts to reduce the Rohillas, who had been intriguing with the Marāthās, and had refused to pay for the help given them in 1772. The Council at Calcutta hesitated, but finally sent troops; and in 1774 Rohilkhand was added to Oudh, with the exception of the present Rāmpur State, which was left in the hands of a Rohilla chief.

Shujā-ud-daula died in 1775, and was succeeded by his son, Asaf-ud-daula, who was incapable and inclined to debauchery. He was at once required to cede to the Company the *zamīndāri* of Benares, and to pay more for British troops. His personal extravagance was great, and he demanded large sums from his mother, the Bahu Begam. The court was now finally removed to Lucknow, and Fyzābād began to decline, while most of the state suffered from his failure to exercise any personal authority and from the quarrels of his subordinates. In 1781 a new treaty was made by Warren Hastings, under which the British troops in Oudh were reduced to one brigade and one regiment, and the Nawāb was authorized to resume *jāgīrs* or grants of land. Asaf-ud-daula took advantage of this to confiscate the *jāgīrs* of his mother and grandmother, and by imprisoning their chief officers extorted large sums of money from them. Warren Hastings's share in these transactions was one of the counts in his subsequent impeachment. His approval of the resumption of the *jāgīrs* was, however, justified by the behaviour of the Begams, who had raised the whole of Eastern Oudh against the British when the *émeute* at Benares took place in 1781[1].

[1] Warren Hastings's *Insurrection at Banaris*, Appendix, p. 8 (Roorkee reprint, 1853).

Asaf-ud-daula died in 1797, and was succeeded—after a short interval, during which his reputed son, Wazīr Alī, ruled—by his half-brother, Saādat Alī Khān, who concluded a treaty ceding to the Company the fort of Allahābād and promising an annual subsidy of 76 lakhs, while the British in return undertook the entire defence of Oudh. Four years later, after the threatened attack by Zamān Shāh Durrāni, Rohilkhand and other parts of the Oudh territories were in a state of anarchy, and it was feared that Sindhia would seize the opportunity to attack the state. The Nawāb, therefore, executed a fresh treaty giving up the so-called Ceded Provinces[1], which left him with the area now called Oudh, surrounded on all sides by British territory except on the north, where the Gurkhas ruled. Saādat Alī Khān died in 1814, having been a good ruler compared with his predecessor. In particular, he attempted to reform the revenue administration, one of his chief difficulties being the resumption of grants made by previous rulers. At his death the treasury contained 14 crores of rupees, though all establishments had been paid up to date and there were no debts.

The history of his successors is a miserable record. The only redeeming feature of the period is the occasional employment as minister of the capable Mahdī Alī Khān, who had been trained under Saādat Alī. Ghāzī-ud-dīn Haidar, son of Saādat Alī, was allowed to assume the title of king or Shāh in 1819, and was the first to strike coin in his own name. He spent four crores of the treasure left by his father, and was succeeded in 1827 by his son, Nasīr-ud-dīn Haidar, a debauchee, who aped English manners and left only 70 lakhs when he died in 1837. An attempt was then made to place a putative son on the throne; but a few of the Company's sepoys were sufficient to quell the disturbance that arose, and the uncle of the late king succeeded as Muhammad Alī Shāh. He died in 1842 and was followed by his son, Amjad Alī Shāh (died 1847). In 1850 it was estimated that Wājid Alī Shāh, the last king, was spending more than 20 lakhs annually over and above the whole revenue of the state, while the allowances of his officials and his family were greatly in arrears. Muhammad Alī Shāh had made some attempts at reform in the administration of justice and the revenue system; but Mahdī Alī Khān, whom he recalled for the purpose, was then an old man, and nothing came of them.

Open resistance to the king's officials and defiance of all law and order were the ordinary rule. Chronic anarchy and oppression had reduced the people of Oudh to extreme misery, and reform by its

[1] The present Gorakhpur Division, most of the Bareilly Division, and the Districts of Allahābād, Cawnpore, Fatehpur, Etāwah, Mainpurī, Etah, and Farrukhābād, the south of Mirzāpur, and the Tarai *parganas* of the Kumaun Division.

native rulers had long been hopeless. In 1828 the Resident had reported that only British assumption of administration could save the country from ruin, and in 1834 the Court of Directors had authorized this step; but it was averted for the time by the improvement effected by Mahdī Alī Khān. In 1856 affairs had come to such a pass that a treaty was proposed to the king, which provided, on liberal terms to himself and his heirs, for the cession of his state to the Company. The king, however, refused to sign it; and accordingly, in February, 1856, the British Government assumed to itself the government of Oudh, exclusively and for ever. A provision of 12 lakhs a year was offered to the king, which he accepted in October, 1859, and separate provision was sanctioned for his collateral relatives. Wājid Alī Shāh was allowed to retain the title of king of Oudh till his death in 1887, when the title ceased absolutely, and the pecuniary allowances were reduced. On its annexation, Oudh was constituted into a Chief Commissionership, and organized on the model of administration which had been adopted in the Punjab eight years previously. Troops had been moved in, and one British infantry regiment held Lucknow, while Native regiments garrisoned Sītāpur, Fyzābād, Sultānpur, Bahraich, Daryābād, Salon, and Secrora. The first year after annexation passed on the whole quietly.

The annexation had, however, caused considerable discontent among important classes. The *talukdārs* feared, with more or less reason, the loss of position and estate. The sepoys, who were largely recruited from the Province, anticipated the curtailment of the exceptional privileges which they had enjoyed while their homes were in native territory. The rebellion began in Oudh a fortnight after the outbreak at Meerut gave the signal for a general rising. In March, 1857, Sir Henry Lawrence had assumed the administration at Lucknow; and on May 30 five of the Native regiments broke into mutiny. The remainder of the events connected with the siege and recovery of the capital are narrated in the article on LUCKNOW CITY, and need only be briefly mentioned here. For some time the *talukdārs*, with few exceptions, took no active part in the revolt; several of them did noble service in saving the lives of fugitives; but the native garrisons of the out-stations followed the example of their comrades at Lucknow, and by the middle of June the Residency at Lucknow was the only spot in the Province under the British flag. On July 4 Sir Henry Lawrence died from wounds caused by a shell. For twelve weeks the little Lucknow garrison was besieged by an overwhelming body of mutineers, till relieved by Outram and Havelock on September 25. In spite of this reinforcement, the British force found itself too weak to fall back upon Cawnpore, and the siege continued till raised by Sir Colin Campbell on November 17. The women and children were

then escorted to Cawnpore by the main body, while General Outram held the outlying post of the Alambāgh with a small garrison. Lucknow itself remained in the hands of the rebels, who fortified it carefully under the direction of the Begam[1] of Oudh. Early in 1858 General Franks organized a force at Benares for the reconquest of the Province, and cleared the south-eastern Districts of rebels. At the same time Jang Bahādur, the minister of Nepāl, assisted the British with a body of 8,000 Gurkhas, and twice defeated the insurgents with great slaughter. On the last day in February Sir Colin Campbell crossed the Ganges and marched on Lucknow. Occupying the Dilkushā palace on March 5, he effected a junction with Franks and the Nepālese army, and began the siege the next day. The city was captured after a desperate resistance, and the work of reorganization of the Province began. Early in April Sir Hope Grant marched with a column north-west of Lucknow, and soon afterwards General Walpole passed through Hardoī. In May the rebels who threatened the Cawnpore road were dispersed, and in June the Begam's army, which was threatening Lucknow, was defeated. General Grant marched to Fyzābād in July and then south to Sultānpur, while a force co-operated from Allahābād. The military police, which had been reorganized, and a Sikh contingent under Rājā Randhīr Singh of Kapūrthala did valuable service; and when the Commander-in-Chief took the field in November, 1858, the rebellion collapsed at once, and Oudh was pacified by the end of the year.

Oudh is rich in ancient sites, but none of these has yet been regularly explored, except the mounds at SET MAHET in Gondā and Bahraich Districts, which yielded important Buddhist and Jain remains. Opinions are divided as to whether this is the site of the ancient city of Srāvastī. Popular belief associates many places with the aboriginal Bhars, of whose history little is known. At Ajodhyā, which is connected with the legendary history of the Solar race, the Hindu temples are all of modern date. The early Muhammadan period is chiefly represented by traditions of the religious incursion of Saiyid Sālār, whose tomb at Bahraich was built early in the thirteenth century, or 200 years after his death. The mosque of Bābar at Ajodhyā, and the remains of a few buildings erected by the Sūri Pathāns, may also be mentioned. The Mughals have left few memorials in the Province; and the chief buildings now standing are those erected by the Nawābs and kings of Oudh in the last quarter of the eighteenth and first half of the nineteenth centuries, at FYZĀBĀD and LUCKNOW. The earlier buildings of this period are not unpleasing; but the style degenerated, and the later edifices are vulgar in the extreme.

[1] Wife of Wājid Alī Shāh, the last king, and mother of Birjis Kadar, who assumed the throne.

Population.

Oudh has probably the densest rural population of any equal area in the world. The first Census taken in 1869 returned a total population of 11·2 millions, on an area of 24,000 square miles, yielding an average of 468 persons per square mile; but defects in the procedure probably caused the figures to be exaggerated. In 1881 the population was returned at 11·4 millions, the central Districts having suffered from famine. Ten years later there had been an increase to 12·7 millions, and all parts of the Province showed an increase in prosperity. The famine of 1896-7 caused distress in southern and western Oudh, especially in Hardoi and Rāe Barelī, but the total population increased to 12·8 millions in 1901. Statistics of the population in 1901 for each of the twelve Districts included in the two Divisions of Lucknow and Fyzābād will be found in the article on the UNITED PROVINCES. The average density was 535 persons per square mile; but in single Districts the figure varied from 820 in Lucknow and 704 in Fyzābād to 305 in Kherī. Central Oudh is the most thickly populated portion, while the submontane Districts are less crowded, but are filling up rapidly. Emigration to distant parts of India and to the colonies is becoming considerable. Partābgarh and Rāe Barelī Districts in southern Oudh send the largest numbers to Assam, while the northern Districts of Gondā and Fyzābād supply emigrants to the colonies. The principal city in the Province is Lucknow, which has a population of 264,049, including the cantonments, and is larger than any city in India except the three Presidency towns and Hyderābād. Fyzābād (with Ajodhyā) has a population of 75,085; but there are only three other towns, Bahraich (27,304), Sītāpur (22,557), and Shāhābād (20,036), whose population exceeds 20,000. The absence of large cities and towns is remarkable, and the agricultural population forms nearly 73 per cent. of the total.

The proportion of Hindus to Musalmāns in the total population of Oudh is much the same as in the Province of Agra, though the Musalmāns are numerically a little weaker and are found to a larger extent in towns. Out of 1·7 millions of Musalmāns more than 62,000 are Shiahs, the largest numbers being in Lucknow city, where the sect of the former kings still has many followers.

Except in Hardoī District, where a dialect of Western Hindī is spoken, the language of the whole of Oudh is the Awadhī dialect of Eastern Hindī, an old form of which was used by Tulsī Dās, the author of the vernacular version of the Rāmāyana which has been termed the Bible of Upper India. The dialect is still a favourite vehicle for verse, as its forms are more suitable to the indigenous metres than Urdū or Hindustāni, which is used for prose or in conversation by educated people.

The caste system is described in the article on the UNITED PROVINCES. In rural tracts more respect is paid to the higher castes than in the Doāb, and the prejudices of Brāhmans and Rājputs against touching a plough are recognized by their landlords, who allow them privileged rates of rent. Brāhmans number 1·4 millions, and Ahīrs and Chamārs 1·3 millions each. Among the cultivating classes may be mentioned the Kurmīs (0·9 million), and Lodhas and Muraos (0·4 million each); and among lower castes the Pāsīs, numbering nearly a million, who are largely employed as toddy-drawers, *chaukīdārs*, and labourers.

Communications.

No metalled roads existed in Oudh at the time of annexation, except that from Cawnpore to Lucknow. After the pacification in 1858 the first lines of communication to be taken up were roads from Allahābād to Fyzābād and from Lucknow to Fyzābād. With the extension of railways the roads have become only of local importance. The main line and a loop of the broad-gauge Oudh and Rohilkhand State Railway pass from north-west to south-east through Oudh south of the Gogra, while an important branch connects Lucknow with Cawnpore, and a line from Allahābād through Partābgarh and Sultānpur to Fyzābād has recently been opened. The submontane Districts are well served by the narrow-gauge Bengal and North-Western (Company) line and the Lucknow-Sītāpur (State) Railway.

Administration.

Oudh remained a separate administration until February, 1877, when the offices of Chief Commissioner of Oudh and Lieutenant-Governor of the North-Western Provinces were united. Since 1902 the title of Chief Commissioner has merged in that of Lieutenant-Governor of the United Provinces. In revenue matters the Chief Commissioner remained the principal authority till after the passing of Act XX of 1890, under which the control of the North-Western Provinces Board of Revenue was extended to Oudh. For most administrative purposes there is now no difference between the Provinces of Oudh and Agra. The principal exceptions are in the land revenue system, especially in its relation to tenures, the rent law, and the judicial system, each of which will now be described.

Land revenue.

On the acquisition of what is now the Province of Agra, the policy adopted was to set aside the officials who, during the decline of Mughal power, had acquired quasi-proprietary rights and an hereditary position. The official *zamīndārs* of Bengal had been tried and found wanting, and an attempt was made to engage for the payment of revenue with the actual occupiers of the soil. In several Districts a double proprietary right was found, the holder of the superior right being called a *talukdār*. The relation of the *talukdār* to the subordinate proprietor was, however, largely a temporary arrangement due to the disturbed state of the

country; and the subordinate proprietors were therefore invested with full proprietary rights, subject, in some cases, to the payment of an allowance to the *talukdārs*, who were confirmed only in their ancestral estates. The same policy was applied to Oudh on annexation, though the circumstances were not identical. The *talukdārs* then held 23,543 villages in the Province out of 36,721. A summary settlement was made in 1856, which recognized the rights of the *talukdārs* in 13,640 villages with a revenue of 35 lakhs, and set them aside in 9,903 villages with a revenue of 32 lakhs. The Mutiny broke out in May, 1857, and on the restoration of order in 1858 the policy was completely reversed. In the first place, the proprietary right in practically all the land of the Province was declared to be confiscated on account of rebellion. This proclamation was severely censured in India and in England, but was justified on the ground that the change in policy required the cancellation of existing rights. Only five[1] *talukdārs* had remained loyal; their rights were maintained, and they were subsequently rewarded with large additional grants and a permanent settlement. The other *talukdārs* and landholders were called on to submit, and a liberal measure of indulgence was promised to those who came forward promptly and helped to restore order. Though order had not been completely restored, owing to the suspicion of the *talukdārs* regarding the real intentions of Government, summary settlements were commenced in 1859 and 22,658 villages were settled with *talukdārs*. This reversal of the former policy became the subject of much discussion. Lord Canning in April, 1858, described the majority of the *talukdārs* as men, distinguished neither by birth, good service, nor connexion with the soil, who had acquired their position by holding office under a corrupt government; but at the same time he justified the new policy by declaring that the village proprietors had shown themselves unfit for the position in which they had been put. In October he was of opinion that the action of the latter had almost amounted to an admission that they did not value independent rights, and that the *talukdāri* system was 'the ancient, indigenous, and cherished system of the country.' More complete inquiries than were then possible have shown that neither of these statements was altogether correct. With some notable exceptions the majority of *talukdārs* at annexation were not officials, but belonged to families connected with the soil. Many of them were the descendants of hereditary chiefs, whose authority had long been acknowledged over wide tracts of country. So far as the *talukas* represented these chieftainships, or the territory held by a body of clansmen with their Rājā as its head, they were no doubt ancient and indigenous. In its later form, how-

[1] The proclamation of March, 1858, mentioned six, but one was found later to have rebelled.

ever, when the system had developed under a weak and corrupt government, it is more correctly described as one of convenience, as far as the village proprietors were concerned, than as a cherished institution. Almās Alī, the capable minister of Nawāb Saādat Alī Khān at the end of the eighteenth century, took pains to engage directly with the village occupiers in the part of the Province under his control. For fifty years afterwards a weak central government made few attempts to control its corrupt officials or to keep the peace among the *talukdārs.* The petty Rājās, constantly fighting with each other or with the officials, were interested in attaching to themselves village communities who could aid them with fighting men, while the latter gained by voluntarily including their villages in *talukas*, as the *talukdārs* paid revenue direct to Lucknow and the extortions of the collectors were avoided. Thus by 1856 many of the estates held by representatives of old families had grown far beyond their original limits, by voluntary accessions, by the conquest of weaker neighbours, or by the crushing of the village proprietors. In addition there were the comparatively few large *talukas* put together by court favourites, officials, or bankers. The summary settlement of 1859 restored the status of 1856, regardless of the methods by which estates had been acquired, except where estates were permanently confiscated for murder or the refusal to submit. The same year a declaration was issued that those *talukdārs* with whom a settlement had been made had acquired permanent, heritable, and transferable rights in their *talukas.* Formal certificates (*sanads*) announcing this were drawn up and distributed. An Act to define the rights of *talukdārs* and to regulate the succession to their estates was subsequently passed (The Oudh Estates Act, 1869). The result has been to give the *talukdārs* absolute powers of disposal of their property, either in their lifetime, or by will[1], notwithstanding the limits imposed by Hindu or Muhammadan law. Most estates descend in case of intestacy to a single heir under a law of primogeniture, the rules of which are contained in section 22 of the Oudh Estates Act, but others are subject to the ordinary law of inheritance.

The *talukdārs*, like the large landholders in all parts of India, have had their troubles. Debts before annexation and mismanagement afterwards involved many of their estates, and in 1870 an Act was passed for their relief. The estates of those who applied to come under its operation were vested in managers, and as a consequence all civil suits and the execution of decrees against such estates were suspended. In all, forty-seven estates with a rental of 25 lakhs were brought under the Act; but three were released almost at once. The remaining

[1] When all heirs are disinherited, the will has effect only if executed more than three months before the death of the testator and registered within one month of the date of execution.

forty-four properties were found to be indebted to the amount of 32 lakhs. The working of the Act, while favourable to the *talukdārs*, gave rise to well-founded complaints by creditors. Mortgagees in possession could be ousted, and interest was reduced to not more than 6 per cent. In 1873 it was proposed to make Government loans, so as to free those estates which were certainly capable of repaying them with 5 per cent. interest in twenty years; but two years later it was decided that all private debts should be paid off by loans from Government. More than 26½ lakhs was advanced, and the cost of management was reduced by making Deputy-Commissioners responsible for it. The later administration of the Act was thus similar to the operations of the Court of Wards.

In 1894 the *talukdārs* asked that the Act of 1870 might be revived, and also raised the question of making estates inalienable. Discussion followed, and in 1900 an Act was passed providing that *talukdārs* and grantees in whose estates the rule of primogeniture is in force may apply for permission to bring their estates under the Act. If property is encumbered it may only be 'settled' (or entailed) with the consent of all the encumbrancers, or when Government is satisfied that their interests will not suffer. The 'settlement' may be declared irrevocable, or, if this is not done, it may be cancelled with the sanction of Government. The effect of the Act is to make the holder of a 'settled' estate incapable of alienating or encumbering it; leases may be given only for seven or, with the District officer's sanction, for fourteen years; a testator may only bequeath 'settled' property as a whole, and must bequeath it to an heir. Up to the end of 1904 five estates had been 'settled' under the Act, all but one irrevocably.

The terms of the *sanads* of 1859 reserved to the Government power to take such measures as it might think fit to protect the inferior proprietors and village occupants, and an acute controversy took place which was not settled till 1866. In regard to the subordinate proprietors, the dispute was whether rights should be recognized only so far as they were actually enjoyed in 1856, or whether the enjoyment in previous years of rights subsequently lost should be held to give a valid claim. It was soon decided that the settlement courts and not the civil courts should adjudicate on disputed cases, and should be allowed to hear claims to sub-proprietary rights based on enjoyment of rights as far back as 1844 or twelve years before annexation. The definition of what should be considered an enjoyment of rights proved more difficult, and there was hopeless disagreement over the rights of tenants. In the latter case the question turned on whether there was any custom by which length of tenure gave a right of occupancy. An inquiry was held, the results of which were differently interpreted. Finally, in 1866, it was found possible to dispose of the two matters together by

what is known as the Oudh Compromise. The *talukdārs* agreed to the detailed rules drawn up for the guidance of the settlement courts in dealing with claims to sub-proprietary rights, which were embodied in Act XXVI of 1866 and later executive orders. It was at the same time decided that tenants who had held proprietary rights within thirty years of annexation should receive occupancy rights, while no other tenant-right was recognized.

In Oudh the Government demand for revenue has from the first been nominally half of the net rental 'assets.' Where both superior and inferior proprietary rights exist, the settlement was made with the superior proprietor or *talukdār*. It was then decided by the settlement court whether a sub-settlement should be made with the inferior proprietor or not. The latter is called a sub-settlement holder where this was done, and his rights include the power of transfer. In other cases the right awarded was a permanent, heritable, but not transferable lease at a rent fixed by the settlement court. The sub-settlement holder or permanent lessee manages the area in which he has rights, and pays rent (which includes the Government demand) to the *talukdār*. If he falls into arrears, the *talukdār* may either sue in the rent courts or apply to the District officer to collect the rent for him.

It has been shown that the proposal to grant occupancy rights in Oudh based on long holding was given up. By Act XIX of 1868, however, tenants who had possessed proprietary rights within thirty years of annexation, and had lost them when annexation took place, received a heritable, but not a transferable, right of occupancy in the land held by them in the village or estate where they were formerly proprietors. This right includes protection from eviction, except for non-payment of arrears of rent, and carries with it a privileged rate of rent which cannot be enhanced beyond a rate 12½ per cent. below that paid in the neighbourhood by tenants with no right. When the revenue law was consolidated, Acts XVII and XVIII of 1876 granted a similar right to landholders whose proprietary or under-proprietary rights were transferred for arrears of land revenue, or in execution of decree after the passing of these Acts, in respect of as much of the land in their cultivating occupancy at the time of transfer as the District officer might determine. Important changes were introduced by the United Provinces Acts III and IV of 1901. Ex-proprietors who acquire rights under these Acts enjoy a privilege in rent of four annas in the rupee (or one-fourth), and by the latter Act the right was extended to persons whose proprietary or under-proprietary rights had been transferred by voluntary alienation. The right acquired under these Acts is called ex-proprietary, and it accrues only in land continuously cultivated by the ex-proprietor for twelve years before the date of the transfer, or in *sīr*, or homestead land. In Oudh *sīr* means

land which had been recognized as *sīr*, or had been cultivated continuously by a proprietor or under-proprietor, for seven years before the passing of the Oudh Rent Act, 1886.

It had been asserted in the great controversy that there was no danger in Oudh of rack-renting, as the land was not fully cultivated, and tenants were in demand instead of competing for holdings. The population had, however, been underestimated, for while in 1859 it was guessed at between 5 and 8 millions, the Census of 1869 showed it was about 11¼ millions. The extent of the protection afforded by the grant of occupancy rights was overestimated. Instead of these forming 15 to 20 per cent. of the cultivating classes, they were found to number less than one-half per cent. By 1873 the number of notices of ejectment of ordinary tenants had attracted attention, and annual inquiries showed that these notices were being largely used as a means to enhance rents. In 1881 the views expressed by the Famine Commission on the relations between landlord and tenant in Northern India led to further inquiry; and the estate of one *talukdār* was sequestrated on the ground that he had enhanced rents excessively and discouraged cultivation, and thus committed a breach of the conditions of his *sanad*, which directed him to promote the agricultural prosperity of his estate. The order was cancelled by the Government of India; but at the same time more information was called for on the state of Oudh, and a careful inquiry was made in 1882–3. This showed that there had been a considerable enhancement of rent during the thirteen or fourteen years which had elapsed since settlement. In the villages selected the average incidence of rent had increased by nearly 25 per cent., the increase varying from 14 per cent. in Gondā to over 49 per cent. in Partābgarh. There was a general feeling that the tenants should be placed in a more secure position, and that enhancement should bar a further increase for a certain time. The remedies to be applied were the subject of much discussion, which resulted in the Oudh Rent Act of 1886. Under this law all tenants without a right of occupancy obtained the statutory right to retain the holdings occupied by them when the Act was passed, at the rent then payable, for a period of seven years from first occupation or from the last change in the rent or area of the holding. After each period of seven years rent may be enhanced within a limit of 6¼ per cent. On the death of a tenant his heir may complete the period of seven years then current, after which the landlord may make a fresh contract for rent without the 6¼ per cent. limit; but this in turn becomes subject to the septennial revision described above. A statutory tenant may be ejected at the close of a seven years' period; but unless the tenant is ejected because he has refused to pay a legal enhancement, a penal court fee of half the annual rent not exceeding Rs. 25 is levied, and in

any case the new rent may not exceed the old by more than 6¼ per cent. This Act has worked well, though it has not entirely prevented enhancements beyond the legal limit. In many cases such enhancements have been borne without complaint where rents were inadequate; but the tenantry have shown themselves ready to come forward freely where real injustice is done, and they are certainly better protected than they were before.

The judicial system in Oudh is separate from that of Agra. Up to 1879 the ordinary non-regulation system prevailed, according to which the same officials exercised civil, revenue, and criminal powers. In that year it was modified, and under the Oudh Civil Courts Act of 1879 Subordinate Judges and Munsifs were appointed for civil work. The Commissioners of Divisions continued to be Divisional, Civil, and Sessions Judges till April, 1891, when District Judges were appointed and two Commissionerships were abolished. The highest court of appeal is that of the Judicial Commissioner, who was in 1905 assisted by one permanent and one temporary Additional Judicial Commissioner. District Magistrates, as in most non-regulation Provinces, can pass sentences of imprisonment up to a limit of seven years. The principal statistics of civil litigation are given below. Civil suits proper are more numerous proportionately to the population than in Agra, but tend to decrease, while rent suits are fewer, but are increasing.

Judicial.

	Average for ten years ending 1890.	Average for ten years ending 1900.	1901.	1903.
Suits for money and movable property	48,433	48,389	38,641	39,144
Title and other suits	7,956	7,307	8,568	7,697
Rent suits	31,066	34,889	37,363	49,658
Total	87,455	90,585	84,572	96,499

[Sleeman, *Journey through Oude* (1858); Hoey, *Memoirs of Delhi and Fyzābād* (1885 and 1889); Irwin, *The Garden of India* (1880); McLeod Innes, *Lucknow and Oudh in the Mutiny* (1902); Gubbins, *Mutinies in Oudh* (1858); *Blue Books of* 1856, 1857, 1858, 1859, 1861, and 1865; *Papers relating to Under-proprietary Rights and Rights of Cultivators in Oudh* (Calcutta, 1867); *Conditions of Tenantry and Working of Rent Law in Oudh* (Allahābād, 1883).]

Owsa Tāluk (*Ausa*).—Eastern *tāluk* of Osmānābād District, Hyderābād State, with an area of 478 square miles. The population in 1901, including *jāgīrs*, was 71,365, compared with 88,484 in 1891, the decrease being due to the famine of 1900. The *tāluk* has two towns, OWSA (population, 6,026), the head-quarters, and LĀTŪR

(10,479), a great commercial centre, besides 130 villages, of which 26 are *jāgīr*. The Mānjra river separates it on the north from Bhir and on the east from Bīdar District. Near the village of Gharosa, 11 miles east of Owsa, is a small range of hills. The land revenue in 1901 was 1·7 lakhs.

Owsa Town (*Ausa*).—Head-quarters of the *tāluk* of the same name in Osmānābād District, Hyderābād State, situated in 18° 15′ N. and 77° 30′ E. Population (1901), 6,026. Malik Ambar, the Nizām Shāhi minister, captured the fort here and named it Ambarpur, which was corrupted into Amrāpur. The fort is square in shape, surrounded by a double wall and a moat all round, and is said to have been built by the Bijāpur kings. It contains a large gun, 18 feet long, with the name of Nizām Shāh engraved on it. Most of the old buildings are in ruins, but an extensive underground building measures 76 by 50 feet, the roof of which forms the bottom of a large cistern. An old mosque was built during Aurangzeb's viceroyalty of the Deccan, as appears from an inscription it bears. The town is a flourishing centre of the grain trade, the exports being sent to Sholāpur and Bārsi.

Oxus (or Amou Daryā).—A famous river of Central Asia, the historic frontier between Irān and Turān, which may be defined as the drainage channel of the huge mountain system which, roughly speaking, is bounded on the north by Russian territory, on the south by the Hindu Kush and the Koh-i-Bāba, and on the east by the Pāmirs. A thousand streams and rivers contribute their snow-fed waters to form the great river, which rolls sluggishly along between ancient Bactria and modern Bokhāra till it empties itself into the Aral Sea. The source of the Oxus has been much disputed. In his book *The Pāmirs and the Source of the Oxus*, Lord Curzon states that the true source is to be found in the great glacier at the head of the Pāmir-i-Wākhān. There the river, known as the Ab-i-Wākhān, issues from two ice caverns in a rushing stream. About 25 miles below it is joined by the stream generally called the Sarhad or Little Pāmir river, which rises in the low plateau that lies at the south-western end of Lake Chakmak, on the Little Pāmir. The next important affluent flows in, also on the right bank, from the Great Pāmir, where it rises in Lake Victoria. This is the river which was assumed by Wood to be the true parent stream of the Oxus. It is commonly marked on maps as the Pāmir river, although the title Panja or Ab-i-Panja, which the main stream commonly bears below Kila Panja, is by some applied to this upper branch. About 160 miles below the confluence at Kila Panja, after the river has made a great bend to the north at Ishkashim, it receives from the east, at Kila Wāmar, the river which is known in its upper reaches as the Murghāb, and higher again as the Aksu. This stream originally emerges from the eastern end of Lake Chakmak on

the Little Pāmir, and throws a great loop round the Middle Pāmirs on the north, as the Panja encircles them on the south. Some authorities hold that the Aksu or Murghāb should be regarded as the main river, on the ground that the Greek name Oxus is a corruption of the Turkī *Aksu*, that the entire length of the Aksu-Murghāb is greater than that of the Panja, and that it receives a larger number of tributaries in its course.

From Kila Panja to Kāmiāb, a distance of 600 miles, the Oxus forms the boundary between Afghānistān and Bokhāra. From its southern watershed, draining from south to north, the river, below the confluence of the Panja and Aksu-Murghāb, receives, on the extreme east, the Kokcha, which, rising in the Hindu Kush south of Jirm, defines the position of a route connecting Chitrāl with Faizābād; and the Surkhāb or Kundūz, which by means of two branches—the Andarāb from the east and the Surkhāb proper from the west—connects the Khāwak pass and Bāmiān with the Oxus, north-west of Khānābād. Proceeding west, we next come to a series of rivers which belong to the Oxus basin, but are either expended in cultivation or lost in the plains. These are the Tashkurghān, which flows to the town of that name and is, like the Surkhāb, important in connexion with great trade routes; the Band-i-Amīr, which drains the northern slopes of the Koh-i-Bāba; and the Sār-i-Pul and the Kaisār or Maimana, which have their sources in the Band-i-Turkistān.

The Oxus is navigable by boats of light draught throughout a great portion of its length; and a flotilla of Russian steamers plies regularly during the summer between Urganj in Khiva and the Faizābād Kila in Bokhāra, a distance of nearly 750 miles.

Oyster Rocks (or Devgad).—A cluster of islands about a mile in length east to west, in North Kanara District, Bombay, 2 miles west of Kārwār. The north-west island, the highest, is 138 feet above the sea, and at a distance of a cable's length from the shore there is a depth of seven fathoms. On the top of this island, in 14° 49′ N. and 74° 4′ E., a lighthouse has been built. It is a round tower of white granite, 72 feet high and 210 feet above mean sea-level. The light is a fixed white dioptric of order 1, which in clear weather can be seen for 20 miles.

Pa-an Subdivision.—Subdivision of Thaton District, Lower Burma, consisting of the PA-AN and HLAINGBWE townships.

Pa-an Township.—Township in Thaton District, Lower Burma, lying between 16° 33′ and 17° 26′ N. and 97° 27′ and 98° 0′ E., with an area of 730 square miles. It is a narrow strip of country, running northwards from immediately above Moulmein to the borders of Salween District. The Salween river crosses it diagonally in the centre, and in the north and south forms respectively its eastern and

western border. The population was 76,481 in 1891, and 76,591 in 1901. The people, who are mainly Karens, reside in 277 villages. The head-quarters are at Pa-an, a village of 2,851 inhabitants, on the left bank of the Salween. The area cultivated in 1903-4 was 188 square miles, paying Rs. 1,64,000 land revenue.

Pab.—A range of mountains in Baluchistān, occupying the south-eastern corner of the Jhalawān country and the Las Bela State, between 24° 53′ and 27° 36′ N. and 65° 50′ and 67° 11′ E. Its general direction is north and south from the centre of the Jhalawān country to the sea; on the east it is bounded by the valley of the Hab river, and on the west by the Hingol and its tributary the Arra. Locally, the name Pab is applied only to the backbone of the range; but the generic term may appropriately be extended to the whole mass, which is in the form of a cow's udder, the Khude or Khudo, Mor, and Hālā hills, together with the backbone already mentioned, forming the teats. Within these ranges, reckoning from east to west, lie the valleys of Sārūna and Kanrāch and the Las Bela plain. The drainage is carried off by the Porāli, Hab, and Hingol rivers. The greatest length of the range is 190 miles and the breadth about 70 miles. The highest point, Pharās, is 7,759 feet above sea-level. The numerous limestone ridges generally rise precipitously on their eastern sides, but possess a more gradual slope to the west. The inhabitants are chiefly Mengal Brāhuis, with some Jāmots and Bhākras in the south. Besides flock-owning, their principal means of subsistence is the export of *pīsh* (*Nannorhops Ritchieana*) to Sind. Olive grows in the higher parts and acacia in the lower. Rich grazing grounds for camels, sheep, and goats occur. Copper is reported to be obtainable in the Mor hills. The principal passes are the Lār Lak, Chūri pass, Bārān Lak, and Jau Lak. Towards the southern extremity of the range, in Las Bela, is the shrine of Shāh Bilāwal.

Pābna District.—District in the south-east corner of the Rājshāhi Division, Eastern Bengal and Assam, lying between 23° 49′ and 24° 45′ N. and 89° 1′ and 89° 53′ E., with an area of 1,839 square miles. It lies within the angle formed by the confluence of the Ganges or Padmā and the Brahmaputra or Jamunā, which constitute its southern and eastern boundaries, the latter separating it from Mymensingh and Dacca and the former from Nadiā and Farīdpur; on the west and north-west it is bounded by Rājshāhi, and on the north by Bogra.

Physical aspects.

The general aspect is low and flat. The head-quarters subdivision which forms the south-western half of the District is, like the adjoining portion of Rājshāhi, an area of silted-up river beds, obstructed drainage, and marshy swamps. The Sirājganj subdivision, on the other hand, more closely resembles the neighbouring portion of Bogra, in that the

drainage is not so much impeded by the high banks of deserted river-beds.

The river system is constituted by the PADMĀ and the BRAHMAPUTRA, together with their interlacing offshoots and tributaries. The chief offshoot of the Padmā is the ICHĀMATĪ (1), which flows past the town of Pābna. The Hurāsāgar, which represents the partially dried-up channel of an old river, is now the principal offshoot of the Jamunā. In its course it meets the Phuljhur, and after joining the Baral and Ichāmatī, ultimately reunites with the Jamunā. The whole District is intersected by a network of minor watercourses, which render every part of it accessible by water during the rainy season, and is seamed by deserted beds of large rivers which are generally dry except in the rains. Alluvion and diluvion are constantly taking place, the river channels perpetually swinging from side to side of their sandy beds.

Deep swamps abound; but the only sheets of water which can be called lakes are the CHALAN BĪL, which covers large portions of the Raiganj and Chātmohar *thānas*, and the Bara, Sonāpātila, Gājna or Gandhahasti, and Ghugudah *bīls*, which are respectively 12, 6, 12, and 4 square miles in area.

The District is covered by recent alluvium, consisting of sandy clay and sand along the course of the rivers, and fine silt consolidating into clay in the flatter parts of the river plain.

Where the ground is not occupied by the usual crops of North Bengal, it is covered with an abundant natural vegetation. Deserted river-beds, ponds, and marshes, and streams with a sluggish current have a copious vegetation of *Vallisneria* and similar plants. Land subject to inundation has usually a covering of *Tamarix* and reedy grasses; and in some parts, where the ground is more or less marshy, *Rosa involucrata* is plentiful. Few trees occur on these inundated lands; the most plentiful and largest is *Barringtonia acutangula*. There are no forests; trees are few in number and often stunted in growth, and the waste land is, for the most part, covered with grasses such as *Imperata arundinacea* and *Andropogon aciculatus*. Among the trees, the most conspicuous are the red cotton-tree (*Bombax malabaricum*) and the jack-tree (*Artocarpus integrifolia*). The villages are often embedded in thickets or shrubberies of semi-spontaneous and more or less useful trees.

Leopards and wild hog are common; the latter are numerous and of large size, and 'pig-sticking' has long been a favourite sport of European residents and visitors.

The climate is very equable. The mean temperature increases from 64° in January to 83° in April; it then remains almost constant till September, and falls to 72° in November and to 65° in December. The highest average maximum is 94° in April, the lowest average

minimum 51° in January, and the average mean for the year 77°. Rainfall is seldom excessive; the annual fall averages 61 inches, of which nearly 8 inches fall in May, 11 inches in each of the months of June, July, and August, and 9 inches in September.

Heavy floods occurred in the head-quarters subdivision in the years 1888, 1889, and 1890, when the roads in Pābna town were seriously damaged. Cyclones are not uncommon; in September, 1872, a violent storm swept over the District, which levelled native houses and fruit trees in all directions, sunk more than 100 country boats at Sirājganj, and wrecked several large steamers and flats. The earthquake of 1885 did considerable damage to masonry buildings, but the shock of 1897 was still more severely felt. At Sirājganj the upper storey of the subdivisional office, the jail, and the post office were wrecked, and almost every other masonry building was more or less severely shaken, while in Pābna town brick buildings were much damaged. Fissures opened, and sand was thrown up in various places, while many wells were choked.

History.

Cunningham believes that the name of Pābna is derived from the old kingdom of Pundra or Paundravardhana, the country of the Pods, whose capital was at MAHĀSTHĀN in the adjoining District of Bogra. The recent history of the District is practically the same as that of RĀJSHĀHI, from which it was separated in 1832, when the need for a more efficient administration was beginning to demand recognition. In that year a Joint-Magistrate was stationed at Pābna town; but he remained partly subordinate to the Collector of Rājshāhi, and many of the landowners long retained the privilege, as it was deemed, of paying their revenue into the Rājshāhi treasury. It was not until 1859 that the covenanted official in charge of Pābna received the full title of Magistrate-Collector. In 1845 the subdivision of Sirājganj was formed, and it has since developed into by far the most important portion of the District. Frequent changes have taken place in the limits of Pābna. In 1862 the large subdivision of Kushtia, south of the Padmā, was transferred to Nadiā, and in 1871 the river was constituted the southern boundary of the District.

Pābna is notorious for the agrarian riots of 1873; and though these disturbances were rapidly suppressed, and never assumed a serious character, they are important because they led to the exhaustive discussion of tenant-right which culminated in 'the ryots' Charter,' the Bengal Tenancy Act of 1885. The quarrel arose owing to the purchase by absentee *zamīndārs* of lands which had formerly belonged to the Nator Rājā. From the first the relations between the new-comers and their ryots were unfriendly; the *zamīndārs* attempted to enhance the rents and also to consolidate customary cesses with the rent, and

disputes arose over the proper length of the local measuring-pole. In 1873 the tenantry banded themselves together into leagues pledged to resist oppression, which gradually assumed the form of a 'no rent' agitation. The combination spread throughout the District and beyond its limits, and led to serious breaches of the peace. Prompt action was, however, taken, and the disturbances were suppressed in a fortnight with the help of armed police.

Population.

The population of the present area increased from 1,210,470 in 1872 to 1,310,604 in 1881, to 1,361,223 in 1891, and to 1,420,461 in 1901. The Sirājganj subdivision is healthy; but the drainage is obstructed in the south-west of the District, which was devastated by fever epidemics a quarter of a century ago and is still notoriously unhealthy, the vital statistics uniformly showing an excess of deaths over births. Deaf-mutism is prevalent in the Sirājganj subdivision. The chief statistics of the Census of 1901 are shown below :—

Subdivision.	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Pābna	882	1	1,658	586,749	665	− 2.1	30,356
Sirājganj	957	1	2,062	833,712	871	+ 9.4	37,118
District total	1,839	2	3,720	1,420,461	772	+ 4.8	67,474

The two towns are PĀBNA, the head-quarters, and SIRĀJGANJ. The density of population is greater than in any other District of North Bengal. The south-west of the District is unhealthy and decadent, except in the Pābna *thāna*, where the growing importance of SĀRA, the terminus of the northern section of the Eastern Bengal State Railway, has led to a rapid growth of the population. In Sirājganj the greatest development took place in Raiganj (11.6 per cent.), where immigrants from Chotā Nāgpur, locally called Bunās, are busy clearing the jungle. The jute trade at Sirājganj attracts a large number of up-country labourers, especially from the United Provinces. The vernacular of the District is the dialect known as Northern Bengali. Muhammadans number 1,062,914, or almost exactly three-fourths of the population; Hindus with 357,065 account for practically all the remainder.

The Musalmāns are returned chiefly as Shaikhs (928,000), Jolāhās

most numerous caste; and next come Mālos (32,000), Kāyasths (30,000), and Sunris (28,000). Of the whole population 68·1 per cent. are supported by agriculture, 16·8 per cent. by industry, 1·2 per cent. by commerce, and 1·7 per cent. by the professions.

Two Christian missions are at work, the South Australian Baptist Mission at Pābna and the Tasmanian Baptist Mission at Sirājganj; but neither has made much progress in proselytism. The number of native Christians is only 40.

Agriculture.

The soil is enriched by annual deposits of silt from the Padmā and Jamunā rivers, and is consequently extremely fertile. No less than two-thirds of the net cropped area is estimated to yield two crops annually, and many lands yield three crops in the year.

The chief agricultural statistics for 1903-4 are shown below, areas being in square miles:—

Subdivision.	Total.	Cultivated.	Cultivable waste.
Pābna	882	577	56
Sirājganj . . .	957	654	61
Total	1,839	1,231	117

Rice, which is cultivated over an area of 1,081 square miles, constitutes the staple crop throughout the District. Of the total food-supply, the winter rice forms about three-fifths and the early rice a seventh, while most of the remainder is furnished by cold-season second crops, such as pulses, which are grown on 226 square miles. Early and winter rice are sown in April and May, the former being usually grown on high lands and the winter and spring crops on low lands, but the early and winter crops are sometimes grown on the same class of land and even together. The early rice is reaped in August and September, while the winter rice is not garnered till November, December, or January. Of recent years jute has risen into the second place in the District agriculture, and now covers 219 square miles. Rape, mustard, and other oilseeds are extensively cultivated, and some sugar-cane, wheat, barley, and other miscellaneous food-crops are also grown. The cultivators are prosperous, and as a rule there is little need for advances under the Land Improvement and Agriculturists' Loans Acts; but Rs. 21,000 was advanced under the former and Rs. 2,500 under the latter Act in 1897-8, when there was a partial crop failure.

The local cattle are small and poor, and there is a great dearth of good pasture. Two up-country bulls have been introduced by Government for breeding purposes.

Since the closing of the jute-mills at Sirājganj, the manufacture of gunny cloths and bags has ceased; but in spite of the extensive importation of cheap European piece-goods, several kinds of cotton cloth are still woven by hand, and as recently as 1890 the out-turn of the fine cotton and silk fabrics from Chotadhul and Dogāchi was valued at $2\frac{1}{2}$ lakhs. These fabrics compare with those of Dacca, Farāsdānga, Sāntipur, and other historic seats of the industry, and well-to-do people prefer them to machine-made cloth because of their finer texture. Fine grass and reed mats made of *sītalpāti* (*Phrynium dichotomum*) are extensively prepared, and are exported to neighbouring Districts. Pottery and brass and bell-metal articles are also made to a small extent. The country paper industry at Kalitā has almost died out, killed by competition with the Bally and other paper-mills. In the village of Chātmohar thirty or forty persons are employed on the manufacture of shell bracelets. SIRĀJGANJ is the chief seat of the jute-baling industry in North Bengal, and 14 presses are employed there; there are also 5 presses at BERĀ.

Trade and communications.

A large amount of trade passes through the District, the agricultural produce of neighbouring Districts being exchanged here for salt, piece-goods, and other European wares. Otherwise the trade is almost entirely with Calcutta. The chief exports are jute, of which 72,000 tons were exported in 1903–4, rice, pulses, and mustard. Quantities of loose jute are brought from Rangpur, Mymensingh, and Bogra to the presses at Sirājganj, where it is pressed into bales for export via Calcutta. The principal imports are European piece-goods, salt, and kerosene oil from Calcutta, rice from Dinājpur and Bogra, and tobacco from Rangpur. The most important trade centres are PĀBNA TOWN, SIRĀJGANJ, BERĀ, Ulāpāra on the Hurāsāgar, Dhāpāri on the Padmā, and Pāngāsi on the Ichāmatī. The chief trading castes are Sāhās, Tāntis, and Telis, who are among the wealthiest residents in Pābna town; but at Sirājganj the principal native merchants are Mārwāris. Seven European firms are engaged in the jute business at Sirājganj and two at Berā. The greater portion of the Calcutta trade is dispatched by country boat or steamer via the Sundarbans; but a considerable quantity of jute is also consigned to Kushtia or Goalundo, whence it is carried by the Eastern Bengal State Railway.

The only railway which touches the District is the northern branch of the Eastern Bengal State Railway (metre gauge), which runs across its south-western corner for about 5 miles to the terminus at SĀRA on the north bank of the Padmā. Including 246 miles of village roads, the District contains 881·5 miles of roads maintained by the District board, of which only $7\frac{1}{2}$ miles are metalled. The many rivers, *bīls*, marshes, and low lands render it impossible, without very great

expense, to construct proper roads, and most of those that exist are little more than tracks. A raised road from Pābna to Sāra can, however, be used throughout the year; and a metalled road, 2½ miles in length, leads from Pābna to Bājitpur on the Padmā. Most of the *thānas* are connected with Pābna by raised roads, though there are breaks in places owing to floods.

These roads are little used as trade routes on account of the excellent water communications. Both the Padmā and the Brahmaputra are navigable by native boats of the largest size and also by steamers, and the Baral and the Hurāsāgar by boats of 4 tons burden throughout the year; the other minor watercourses are navigable during the rainy season. The Phuljhur, which was formerly navigable throughout its course, has formed shallows at Nalkā and Ulāpāra, which make it impassable for heavily laden craft. The Dhānbāndi, which passes through Sirājganj, is connected with the Simlā *khāl* and ultimately with the Jamunā by the Kāta *khāl*, and with the Pāngāsi river and the Phuljhur by the Telkupī *khāl*; these artificial channels are, however, navigable only during the rains. On the Brahmaputra a daily mixed service of steamers runs between Goalundo and Phulcharī Ghāt, calling for goods and passengers at several stations in the District, and the Goalundo-Assam mail stops at Sirājganj. The services which ply up the Padmā call at four stations, Nāzirganj, Sātbāria, Bājitpur (for Pābna town), and Sāra. A ferry steamer aided by a District board subsidy runs between Bājitpur and Kushtia, and there are 63 other ferries of less importance.

Pābna is not liable to famine; but in 1874 and again in 1897 there was some local scarcity, and relief works on a small scale were opened by Government.

Administration. For general administrative purposes the District is divided into two subdivisions, with head-quarters at PĀBNA and SIRĀJGANJ. At head-quarters the staff subordinate to the Magistrate-Collector consists of three Deputy-Magistrate-Collectors, one Sub-Deputy-Collector, and two *kānungos*. In charge of the Sirājganj subdivision is a covenanted civilian, assisted by a Deputy-Collector, a Sub-Deputy-Collector, and a *kānungo*.

The civil courts are those of the District and Sessions Judge, who also pays quarterly visits to Bogra, a Sub-Judge, an additional Sub-Judge, and two Munsifs stationed at Pābna, and two Munsifs and an additional Munsif at Sirājganj. The criminal courts include those of the Sessions Judge, District Magistrate, and the above-mentioned magistrates. Frequent disputes arise in connexion with the possession of the valuable lands which are continually being formed by the changes in the courses of the great rivers, and these often culminate in riots. The District is notorious for both land and river dacoities,

and a large gang which had been a terror to traders for many years was broken up in 1900.

The early revenue history is that of RĀJSHĀHI DISTRICT. The current land revenue demand in 1903-4 was 4·06 lakhs, payable by 1,915 estates, of which 1,786 with a demand of 3·59 lakhs were permanently settled, 72 paying Rs. 23,000 were temporarily settled, and the remainder were managed direct by Government. The subdivision of real property has been going on rapidly; and there are now no less than 538 permanently settled estates which pay less than Rs. 10 as land revenue, and 754 which pay between Rs. 10 and Rs. 100. The incidence of land revenue is very light, being only R. 0-7-4 on each cultivated acre; and, although rents likewise rule low owing to the success with which the ryots have resisted enhancements, the land revenue is only 19 per cent. of the estimated rental payable to the *zamīndārs*. Rice lands pay from Rs. 2-4 to Rs. 4-3 an acre in the west of the District, and from Rs. 3 to Rs. 6 in Sirājganj. Jute lands are rented at from Rs. 6 to Rs. 9.

The following table shows the collections of land revenue and total revenue (principal heads only), in thousands of rupees:—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . .	3,90	3,91	4,00	4,06
Total revenue . .	7,33	8,55	10,04	10,49

Outside the municipalities of PĀBNA and SIRĀJGANJ, local affairs are managed by the District board, with subdivisional local boards. In 1903-4 the income of the District board was Rs. 1,25,000, of which Rs. 57,000 was derived from rates; and the expenditure was Rs. 1,28,000, including Rs. 56,000 spent on public works and Rs. 40,000 on education.

The District contains 8 *thānas* or police circles and 8 outposts. In 1903 the police force subordinate to the District Superintendent consisted of 2 inspectors, 27 sub-inspectors, 27 head constables, and 349 constables; and the village watch consisted of 2,332 *chaukīdārs*, grouped in unions under 209 *daffadārs*. The District jail at Pābna has accommodation for 257 prisoners, and a lock-up at Sirājganj for 34.

Only 4·8 per cent. of the population (9 males and 0·4 females) could read and write in 1901. The total number of pupils under instruction decreased from about 23,500 in 1883-4 to 19,882 in 1892-3, but rose again to 24,513 in 1900-1, while 26,184 boys and 1,398 girls were at school in 1903-4, being respectively 24·6 and 1·3 per cent. of those of school-going age. The number of educational institutions, public and private, in that year was 660, including an Arts college, 64 secondary schools, and 571 primary schools. The expenditure on

education was 1·75 lakhs, of which Rs. 14,000 was met from Provincial funds, Rs. 32,000 from District funds, Rs. 1,800 from municipal funds, and Rs. 1,04,000 from fees. The chief educational institutions, including a technical school, are at Pābna town.

In 1903 the District contained 12 dispensaries, of which 3 had accommodation for 50 in-patients. At these the cases of 65,000 out-patients and 742 in-patients were treated during the year, and 2,192 operations were performed. The expenditure was Rs. 20,000, of which Rs. 5,000 was met from Government contributions, Rs. 4,000 from Local and Rs. 3,000 from municipal funds, and Rs. 7,000 from subscriptions.

Vaccination is compulsory only in the municipalities of Pābna and Sirājganj. During 1903–4 the number of persons successfully vaccinated was 46,000, or 33 per 1,000 of the population. There has not been much progress in recent years, but cases of small-pox are rare.

[Sir W. W. Hunter, *Statistical Account of Bengal*, vol. ix (1876).]

Pābna Subdivision.—Head-quarters subdivision of Pābna District, Eastern Bengal and Assam, lying between 23° 49′ and 24° 21′ N. and 89° 1′ and 89° 45′ E., with an area of 882 square miles. The population in 1901 was 586,749, compared with 599,319 in 1891. The subdivision is a tract of silted-up river-beds, obstructed drainage, and marshy swamps, and the decline of the population is due to the consequent unhealthiness of the climate. It contains one town, PĀBNA (population, 18,424), the head-quarters; and 1,658 villages. The density of population, 665 persons per square mile, is considerably less than in the adjoining subdivision of Sirājganj, where more favourable conditions prevail. The chief centres of trade are Pābna town and SĀRA.

Pābna Town.—Head-quarters of Pābna District, Eastern Bengal and Assam, situated in 24° 1′ N. and 89° 16′ E., on the Ichāmatī. Population (1901), 18,424. Pābna was constituted a municipality in 1876. The income and expenditure during the decade ending 1901–2 averaged Rs. 22,000 and Rs. 19,500 respectively. In 1903–4 the income was Rs. 31,000, of which Rs. 8,000 was derived from a tax on persons (or property tax), and Rs. 7,000 from conservancy rates; and the expenditure was Rs. 30,000. The town was formerly liable to floods, but is now protected by an embankment, a mile in length, along the bank of the Ichāmatī. It contains the usual public buildings: a second-class jail has accommodation for 257 prisoners, the principal jail industries being oil-pressing, brick-making, *surki*-pounding, and carpet- and cloth-weaving. The chief educational institutions are the high school managed by Government; the technical school at which engineering, surveying, drawing, and practical carpentry are taught; and the Pābna Institution with the status of a second-grade college.

Pachaimalais ('Green hills').—A hill-range on the borders of

Trichinopoly and Salem Districts, Madras, lying between 11° 9′ and 11° 29′ N. and 78° 31′ and 78° 51′ E., due north of Trichinopoly city. Their total area is 177 square miles, of which 105 are in the Musiri and Perambalūr *tāluks* of Trichinopoly and the rest in the Atūr *tāluk* of Salem. They attain a height of 2,500 feet above the level of the sea, and their greatest length from north to south is about 20 miles. In shape the range has a slight resemblance to an hour-glass, being nearly cut in two by ravines of great size and depth opening to the north-east and south-west. Of the two parts into which it is thus divided, the north-eastern is the larger and has a generally higher level than the south-eastern. A striking characteristic of the range is the great steepness of the western slopes as compared with those on the east, which latter are rarely precipitous and are broken by several long spurs which project far into the low country. The climate of the Pachaimalais is notoriously malarious.

The 'reserved' forests on the hills cover an area of 80 square miles, and consist largely of *usilai* (*Albizzia amara*), *vengai* (*Pterocarpus Marsupium*), teak, black-wood (*Dalbergia latifolia*), sandal-wood, and bamboos. The minor products of the hills are myrabolams (*Terminalia Chebula*); *vembādampattai* (*Ventilago madraspatana*), a bark from which a red dye is extracted; the fruit of the hill gooseberry (*Rhodomyrtus tomentosa*), and honey. The only large game on the range are a few leopards and bears.

The inhabited portion is entirely in the Musiri *tāluk*. This comprises 3 villages—Vannādu, Tambaranādu, and Kombai—containing in the aggregate 68 hamlets and 6,529 inhabitants. The people call themselves Kānchi Vellālas, and say they migrated to these hills from Conjeeveram (compare the account of the Malaiyālis on the Shevaroy Hills) at the time of a severe famine. The crops they cultivate do not differ materially from those grown on the plains. There is no 'wet' cultivation, but an unirrigated variety of rice is raised. The jack-tree (*Artocarpus integrifolia*) is also extensively grown.

The cultivated land is divided into two classes: *ulavakādu*, land capable of being ploughed; and *punalkādu*, or land which cannot be ploughed and the cultivation of which is carried on by grain being dibbled in among trees and rocks wherever a few feet of soil is to be found. These two kinds of land are assessed at 8 annas and 4 annas respectively per acre. The cadastral survey of the hills is in progress. A forest road runs from the Turaiyūr-Atūr road to the foot of the hills, and thence a bridle-path leads to a forest resthouse on the plateau, the total length of both being 8 miles.

Pachambā.—Village in the Girīdīh subdivision of Hazāribāgh District, Bengal, situated in 24° 13′ N. and 86° 16° E., 3½ miles from Girīdīh railway station. Population (1901), 3,510. Pachambā is the

head-quarters of the Free Church of Scotland Mission to the Santāls, and contains a dispensary and schools. An annual fair is held here in the month of Kārtik.

Pachbhadrā.—Head-quarters of a district of the same name in the State of Jodhpur, Rājputāna, situated in 25° 55′ N. and 72° 15′ E., about 5 miles east of the Pachbhadrā station on the Jodhpur-Bīkaner Railway. Population (1901), 3,194. The town has a post office and a vernacular school. The fresh-water supply fails nearly every summer, and water has to be imported by railway. The place is also one of the hottest in India, the thermometer sometimes rising to 122° in the shade. Five miles west of the town is the well-known salt source, which was leased by the Jodhpur Darbār to the British Government in 1878 for an annual sum of 1·7 lakhs. The Government hospital here supplies medical aid to the people of the town. The salt lake has an area of about 10 square miles and, unlike that at Sāmbhar, is not dependent on the rainfall for the production of salt, as the brine springs are perennial. The yearly out-turn is about 35,000 tons. The method of manufacture is peculiar to the locality. Pits of an average length of 230 feet with their banks sloped to an angle of 45° are dug in the bed to a depth of about 11 feet until the subterranean springs of brine have been tapped, and these become filled to a depth of about 3 feet with a strong brine. Crystallization is promoted by throwing branches of the thorny *morāli* (*Lycium europaeum*) into the pits as soon as the formation of an overset of salt indicates that precipitation has commenced. During the great heat of April, May, and June, the evaporation of the brine is very rapid; and as this proceeds and salt is precipitated, more brine flows in until the pit is filled with salt to a depth of about 3 feet, which takes place in two years. The salt is then ready for removal, and, having been cut out in sections, the crystals are shaken off the thorny branches and stored in oblong heaps on the bank. The out-turn from a pit averages about 370 tons every second year, and crop after crop is thus obtained. Almost all the salt manufactured here is removed by the Jodhpur-Bikāner Railway, which has a branch line running from Bālotra to the works.

[F. Ashton, 'The Salt Industry of Rājputāna' in *The Journal of Indian Art and Industry*, vol. ix, January, 1901.]

Pāchet.—Hill in Mānbhūm District, Bengal. *See* PĀNCHET.

Pachhegām.—Petty State in KĀTHIĀWĀR, Bombay.

Pachmarhī.—Sanitarium in the Sohāgpur *tahsīl* of Hoshangābād District, Central Provinces, situated in 22° 28′ N. and 78° 26′ E., on a plateau of the Sātpurā range, 32 miles from Pipariā station on the Great Indian Peninsula Railway. Pachmarhī is connected with Pipariā by a metalled road, along which there is a mail tonga-service. The plateau of the Sātpurā Hills on which the town stands, at an elevation

of just over 3,500 feet, has an area of 23 square miles, the greater part of which is covered with forest. The census population in March, 1901, was 3,020 persons; but at this time of year Pachmarhī is comparatively empty, and it is probable that during the season the number of residents is doubled. The plateau, which is Government property, was acquired in 1869 and 1871, and soon afterwards the Chief Commissioner of the Central Provinces began to reside here during the summer months. Its advantages as a sanitarium were first discovered by Captain Forsyth, the author of *The Highlands of Central India*, in 1857; and the name of the shooting box which he built for himself on the plateau, and called Bison Lodge, is still preserved by a house erected subsequently on the same site. The name is a corruption of *panch mathi*, or 'five huts,' and properly belongs to a small hill in the open part of the plateau in which five caves have been constructed. There is some reason for supposing that these are Buddhist, but Brāhmanical tradition has annexed them as one of the places at which the five Pāndava brothers sojourned during their wanderings. The prevailing rock is a coarse gritty sandstone of great depth, which succumbs readily to denudation; and the steep ravines and gorges that have been formed by the action of water produce some strikingly picturesque pieces of scenery. Of the 23 square miles of which the plateau is composed, 19 are classed as forest. This area is managed principally with a view to the preservation and enhancement of the natural beauties of scenery. The forest growth is generally thin and interspersed with numerous grass glades of park-like appearance. *Sāl* (*Shorea robusta*) is the principal timber tree, and there is also a quantity of *harrā* (*Terminalia Chebula*) and *jāmun* (*Eugenia Jambolana*). Several peaks fringe the plateau, of which the principal are Dhūpgarh (4,454 feet), Mahādeo (4,384 feet), and Chaurāgarh (4,317 feet). Owing to its moderate elevation, Pachmarhī affords only a partial relief from the heat of the plains. The mean temperature in May, the hottest month, is 85°, and the maximum occasionally rises to over 100°. Still, except for a short period during the middle of the day, the heat is never oppressive. During the second half of September and October, after the cessation of the rains, the climate is delightfully cool and bracing, the mean temperature in the latter month being 69°. The rainfall is heavy, averaging 77 inches annually, nearly the whole of which is received between June and September.

Pachmarhī was constituted a municipality in 1886. The municipal receipts and expenditure during the decade ending 1901 averaged Rs. 3,700 and Rs. 3,500 respectively. In 1903-4 the income was Rs. 28,000, including a Government grant of Rs. 22,000. There is also a cantonment, which includes five square miles on the eastern or Piparià side of the plateau. The receipts and expenditure of the

cantonment fund during the decade ending 1901 averaged Rs. 4,200, and in 1903–4 were Rs. 14,000 and Rs. 12,000 respectively, the former figure including a grant of Rs. 6,000 from the Military Department. No regular garrison is located at Pachmarhī, but a convalescent dépôt is maintained for eight months in the year for the British regiment stationed at Jubbulpore. Pachmarhī is also the site for a school of musketry; and three classes for the instruction of officers, each lasting for two months, are held annually.

Pāchora Tāluka.—*Tāluka* of East Khāndesh District, Bombay, including the petty subdivision or *pethā* of Bhadgaon, lying between 20° 28′ and 20° 50′ N. and 74° 57′ and 75° 36′ E., with an area of 542 square miles. It contains three towns, PĀCHORA (population, 6,473), the head-quarters, NAGAR DEVLA (6,050), and BHADGAON (7,956); and 186 villages. The population in 1901 was 125,336, compared with 115,270 in 1891. The increase was due to immigration from Ahmadnagar and other famine-stricken regions. The density, 231 persons per square mile, is much above the District average. The demand for land revenue in 1903–4 was 3·9 lakhs, and for cesses Rs. 26,000. Pāchora consists of a fairly wooded valley, lying between the Sātmāla range to the south and low ranges of hills in the north. The climate is healthy. The only perennial stream is the Girnā. Irrigation is carried on by means of the Jāmda Canal. The annual rainfall averages 30 inches.

Pāchora Town.—Head-quarters of the *tāluka* of the same name in East Khāndesh District, Bombay, situated in 20° 40′ N. and 75° 22′ E., 35 miles south-east of Dhūlia, on the Great Indian Peninsula Railway. Population (1901), 6,473. There is a flourishing trade in cotton; and the town contains 5 ginning factories, 4 cotton-presses, a dispensary, and 3 schools with 257 pupils, of which one, with 38 pupils, is a girls' school. The American Alliance Mission has a branch here.

Padaung.—Township in the Shwedaung subdivision of Prome District, Lower Burma, lying to the west of the Irrawaddy, separating it from the Arakan Yoma, between 18° 21′ and 18° 57′ N. and 94° 41′ and 95° 13′ E., with an area of 1,019 square miles. The population was 52,073 in 1891, and 51,712 in 1901, including about 6,000 Chins, practically all of whom reside in villages on the slopes of the Arakan Yoma. There are 216 villages, the head-quarters being at Padaung (population, 2,260), on the right or west bank of the Irrawaddy. A good deal of cutch is manufactured, but only a small proportion of the land is under cultivation, owing to its hilly nature. In 1903–4 the area cultivated was 75 square miles, paying Rs. 64,000 land revenue.

Padavedu.—Village in the Polūr *tāluk* of North Arcot District,

Madras, situated in 12° 40′ N. and 79° 7′ E. Population (1901), 2,382. This deserted place is one of the most interesting in the District. Though it now contains few inhabitants, tradition says that it was the capital of a powerful dynasty which for many hundreds of years held sway in this part of the country. Perhaps it was a chief city of the Kurumbas, who are declared to have been of old a powerful clan. It was 16 miles in circumference, and full of the remains of temples, resthouses, and fine private residences. Its extent may be judged by the fact that the present villages of Sandavāsal, where the fair or *sandai* of the old town was held, and Pushpagiri, the site of its flower market, are 4 miles apart. The place is traditionally declared to have been entombed by a shower of dust and stones which overwhelmed the whole of its magnificent buildings. Jungle now covers almost the whole area. Two extensive but ruined forts stand upon the plain, and another upon a peak of the Javādi Hills which overlooks the village. The two principal temples in Padavedu are dedicated, one to a goddess called Renukāmbāl, and the other to Rāmaswāmi. The former is the more celebrated, and is still visited by large crowds on Fridays in the month of Adi.

Padhāna.—Village in the District and *tahsīl* of Lahore, Punjab, situated in 31° 28′ N. and 74° 40′ E. Population (1901), 6,210. It is administered as a 'notified area.'

Pādinālknād.—Western *tāluk* of Coorg, Southern India, lying between 12° 6′ and 12° 31′ N. and 75° 22′ and 75° 48′ E., with an area of 400 square miles. The population in 1901 was 28,620, compared with 28,219 in 1891. It contains 57 villages. The entire west is skirted by the high range of the Western Ghāts, including the lofty peak of Tadiandamol (5,729 feet), the highest point in Coorg, and the Perūr and Srimangala peaks. The Cauvery has its source in the northwest, and runs across the middle of the *tāluk* in a south-easterly direction. The north is bounded in some parts by the Nujikal river. There is little arable land, but plenty of hilly grass and forest land, with the largest and most productive cardamom jungles. Rice cultivation is so deficient that even the largest farms are not able to produce sufficient for their own consumption. The ryots in general have to buy rice for six months in the year, and their chief reliance has been on the produce of their cardamom and coffee gardens. Tavunād in the north-west contains some of the wildest tracts in Coorg. In the forests which cover the western declivities of the Ghāts are found the jungle tribe called Kādu Maratis, who live by *kumri* or shifting cultivation; and the Kadavas or Bodavas, the attire of whose women is only a few leaves, but these it is said they change four times a day. The settled population of this *nād* consists almost entirely of Tulu Gaudas. There are many sacred forests called Devara-kādu in the *tāluk*, which

have for ages remained intact. But some of these rich tracts have been cautiously invaded and planted with coffee, a share of the produce being paid towards the worship of the deities despoiled in order to avert their wrath.

Padmā.—The name of the main stream of the GANGES in the lower part of its course between the off-take of the Bhāgīrathi river in 24° 35′ N. and 88° 5′ E. and the south-eastern corner of Dacca District, where it joins the Meghnā in 23° 13′ N. and 90° 33′ E., after a course of 225 miles.

Padmanābham.—Village in the Bimlipatam *tahsīl* of Vizagapatam District, Madras, situated in 17° 59′ N. and 83° 20′ E. The large temple here has much local celebrity; but Padmanābham is chiefly of interest as the scene of the battle between Viziarāma Rāz, Rājā of Vizianagram, and the Company's forces under Colonel Prendergast on July 10, 1794. Viziarāma Rāz was defeated and slain, and with him fell most of his retainers and the principal chiefs of the country, the British loss being only 13 killed and 61 wounded.

Padmanābhapuram (*Palpanāveram*).—Town in the Kalkulam *tāluk* of Travancore State, Madras, situated in 8° 15′ N. and 77° 24′ E., about 32 miles south of Trivandrum. Population (1901), 3,257. This was the most important of the ancient capitals of Travancore. It is surrounded by a square fortification, now fast going into ruins, 2½ miles in circumference, constructed about 1757 under the supervision of a Flemish captain named De Lannoy. The Mahārājā's palace within is the most attractive feature of the town. It is the head-quarters of the Padmanābhapuram district, and contains the magistrate's and Munsif's courts and other public offices.

Pādra Tāluka.—Western *tāluka* of the Baroda *prānt*, Baroda State, with an area of 196 square miles. The population fell from 92,328 in 1891 to 73,395 in 1901. The *tāluka* contains one town, PĀDRA (population, 8,289), the head-quarters; and 82 villages. It is a plain with numerous trees, bounded on the north and south by two rivers, the Mahī and Dhādhar. The soil is mainly of three kinds: *gorāt* or light red, black, and *besār*, a mixture of the two. The *gorāt*, which constitutes nearly three-fourths of the whole, is very rich. The chief crops produced are *bājra*, *math*, *jowār*, *tal*, *tuver*, *dāngar*, cotton, wheat, gram, and tobacco. In 1904–5 the land revenue was Rs. 3,94,000.

Pādra Town.—Head-quarters of the *tāluka* of the same name in Baroda State, situated in 22° 14′ N. and 73° 5′ E., 14 miles from the city of Baroda. Population (1901), 8,289. The town is on the narrow-gauge railway line running from here through Baroda to Dabhoi. It contains Munsif's and magistrate's courts, Anglo-vernacular and vernacular schools, and a dispensary. The munici-

pality receives an annual grant of Rs. 1,700 from the State. The only industries carried on are a little cloth-printing and dyeing; but as Pādra is the centre of a number of prosperous villages there is a fair amount of trade, and the market is well attended. The town is historically interesting as being the place of detention of some well-known members of the Gaikwār family; in particular, Malhār Rao Gaikwār was confined here just before he exchanged his prison for a throne.

Padraunā Tahsīl.—North-eastern *tahsīl* of Gorakhpur District, United Provinces, conterminous with the *pargana* of Sidhuā Jobnā, lying between 26° 31′ and 27° 18′ N. and 83° 43′ and 84° 26′ E., with an area of 921 square miles. Population fell from 605,551 in 1891 to 595,706 in 1901. There are 1,285 villages and three towns—AMWĀ KHĀS (population, 8,918); PADRAUNĀ (7,031), the *tahsīl* head-quarters; and BANSGAWĀ (5,009). The demand for land revenue in 1903–4 was Rs. 5,37,000, and for cesses Rs. 86,000. The density of population, 642 persons per square mile, is about the District average. The *tahsīl* extends from the *sāl* forests in the north to the rich, well-cultivated tract in the centre of the District. It is bounded in places on the north-east by the Great Gandak, which occasionally shifts its channel; and on the west by the Little Gandak. Smaller streams cross the *tahsīl*, flowing usually from north-west to south-east. Padraunā produces sugar-cane, rice, and *kodon*, and also a considerable amount of indigo. The area under cultivation in 1903–4 was 675 square miles, of which 86 were irrigated. Wells supply five-eighths of the irrigated area, and tanks, swamps, and rivers the remainder.

Padraunā Town.—Head-quarters of the *tahsīl* of the same name in Gorakhpur District, United Provinces, situated in 26° 54′ N. and 83° 59′ E. Population (1901), 7,031. The town consists of three parts, called Padraunā, Chhaonī, and Sāhibganj. The latter is now the chief market. Padraunā was identified by General Cunningham with Pāwā, the last halting-place of Gautama Buddha before his death; but the identification has been abandoned. It is the residence of a Kurmi landholder known as the Rai of Padraunā, who holds a large estate in the north of the District, and maintains a dispensary here. The town is administered under Act XX of 1856, with an income of about Rs. 1,300. There is a school with 73 pupils.

Padwa.—*Tahsīl* in the Agency tract of Vizagapatam District, Madras. It is situated on the northern slope of the Eastern Ghāts, and consists of a plateau with an average elevation of 3,000 feet, traversed by several hill ranges which attain heights considerably greater, Arma (5,500 feet) and Sinkram (5,300 feet) being the loftiest peaks in the range. The upper slopes of the hills are as a rule open and covered with high 'bison-grass,' which is annually burnt by the hill

tribes. The area of the *tahsīl* is 1,383 square miles, with a population in 1901 of 64,415, compared with 58,995 in 1891, chiefly hill tribes with a considerable admixture of Telugus. They live in 1,418 villages. The head-quarters are at Padwa village. The *tahsīl* belongs almost equally to the Mādugula, Jeypore, and Pāchipenta *zamīndārs*. Among the places of interest in it may be mentioned the great limestone cave at Borra, which contains a Saivite shrine and from which a stream emerges and runs down a gorge of remarkable beauty 300 feet deep; and Paderu, the former head-quarters of the *tahsīl* and the original home of the Mādugula *zamīndārs*.

Pagan Subdivision.—Southern subdivision of Myingyan District, Upper Burma, containing the townships of PAGAN, SALE, and KYAUKPADAUNG. The head-quarters are at Nyaungu, adjoining Pagan on the river bank.

Pagàn Township.—Central township of Myingyan District, Upper Burma, lying along the Irrawaddy, between 20° 53′ and 21° 20′ N. and 94° 49′ and 95° 16′ E., with an area of 582 square miles. The soil is poor, and chiefly produces early sesamum, pulse, and *jowār*. The population was 49,606 in 1891, and 56,971 in 1901, distributed in one town, Nyaungu (*see* PAGAN VILLAGE) (population, 6,254), the head-quarters, and 189 villages. In 1903–4 the area cultivated was 150 square miles, and the land revenue and *thathameda* amounted to Rs. 77,000.

Pagan Village.—An ancient ruined capital of the Burmese empire, situated in 21° 10′ N. and 94° 53′ E., on the left bank of the Irrawaddy, in Pagan township, towards the south-west of Myingyan District, Upper Burma, in the neighbourhood of the small town of Nyaungu. Population (1901), 6,254. The name Pagan has been applied somewhat loosely to a number of Burmese capitals established at different times in the neighbourhood of the present village. The earliest of these is said to have been founded about the second century of the Christian era, near a village now known as Taungye, and was called Pugama. Other capitals, known as Thiripyitsaya and Tampawadi, were built later, close by the first site; and finally about the ninth century the site near the present village of Pagan was selected, and remained the head-quarters of the Pagan kings till the overthrow of the dynasty in the thirteenth century (*see* MYINGYAN DISTRICT). The ruins of the city walls and the traces of the old moat are still to be seen near the village now known as Pagan or Old Pagan. In ancient times the capital was guarded by four concentric brick walls, each with twelve gates. A moat lay on its northern, southern, and eastern faces, while the western side was protected by the Irrawaddy. When first founded the city appears to have been well watered and well wooded, as there are indications that the rainfall must have been sufficiently copious for extensive rice cultivation. The deficiency of the rains in

later times can only be ascribed to abnormal deforestation, due to the demand for fuel used in making bricks for the innumerable pagodas and other religious buildings for which Pagan is famous.

The most notable of the thousands of shrines, now more or less ruined, are the Bupayā pagoda, the Manuha temple, the Nanpayā temple, the Shwezigon pagoda, the Nagayon pagoda, the Ananda temple, the Shwegugyi pagoda, the Thatbyinnyu and Sulamani temples. and the Gawdawpalin, Damayazika, and Mahabawdi pagodas.. Pyu Saw Ti, the third king of Pagan, is credited with the founding of the Bupayā, one of the most conspicuous, said to have been built to commemorate the complete eradication by the founder of a troublesome *bu* (gourd) creeper which had been found a serious obstacle to the cultivation of cereals. The Manuha pagoda, situated 2 miles south of Pagan, is reputed to have been raised by Manuha, a king of Thaton, who was brought as a captive to Pagan by Anawrata, the most famous of its kings. It contains a gigantic recumbent image of Buddha. The Nanpayā, close to it, is the receptacle of some fine specimens of stone sculpture. The Shwezigon pagoda at Nyaungu is the only notable gilded shrine. Its plinth is adorned with terra-cotta tiles, and within its enclosure are deposited Talaing and Burmese inscriptions of great historical value. It was begun by Anawrata and finished in 1090 by his son Kyansittha. The king employed Indian architects on the Nagayon pagoda (built in 1064), the prototype of the famous Ananda temple, founded in 1090. This latter is Pagan's best-known shrine, and contains stone sculpture of exquisite workmanship and interesting terra-cotta tiles. Its plan, in the form of a Greek cross, and its architecture, which recalls the Jain style, are unique. Alaungsithu, grandson of Kyansittha, founded the Shwegugyi pagoda in 1141, after the model of the sleeping chamber of Buddha, and the Ṭhatbyinnyu pagoda in 1144. The latter is modelled on the lines of the temples of Northern India and has five storeys. Four miles south-west of Nyangu are the Sulamani pagoda resembling the Thatbyinnyu temple, and the Gawdawpalin and Damayazika pagodas built by the famous Narapadasithu (1167–1204). His successor, Nandaungmya Min, built the Mahabawdi pagoda after the model of the temple at Buddh Gayā in Bengal, the only specimen of its kind to be found in Burma. Pagan is a well-known resort for Buddhist pilgrims and foreign tourists, and a museum has been built within the precincts of the Ananda temple for the exhibition of antiquities found in the neighbourhood. Pagan, or more properly speaking Nyaungu, was at one time a municipality. Since 1903, however, the affairs at Nyaungu have been controlled by a town committee consisting of three members, who in 1903–4 administered a fund the income of which amounted to Rs. 6,900 and the expenditure to Rs. 10,000.

Pah.—Petty State in KĀTHIĀWĀR, Bombay.

Pahāsū.—Town in the Khurja *tahsīl* of Bulandshahr District, United Provinces, situated in 28° 10′ N. and 78° 5′ E., 24 miles south of Bulandshahr town. Population (1901), 5,603. Partāb Singh, one of the first Bargūjar immigrants, made it his head-quarters. Pahāsū was the chief town in a *mahāl* under Akbar, and at the end of the eighteenth century was conferred with a *jāgīr* of 54 villages by Shāh Alam II on the Begam Sumrū for the support of her troops. After her death in 1836, it was held for a time by Government and then granted in 1851 to Murād Alī Khān, a descendant of Partāb Singh. His son, Nawāb Faiz Alī Khān, K.C.S.I., behaved with conspicuous loyalty during the Mutiny, and was afterwards commander-in-chief and prime minister of Jaipur State. Since his death in 1894, his son, Nawāb Faiyāz Alī Khān, C.S.I., has served as a member of the Supreme and Provincial Legislative Councils, and is now a minister of state in Jaipur. The town is administered under Act XX of 1856, with an income of about Rs. 900. The Nawāb maintains a dispensary and an Anglo-vernacular school, and there is a primary school with 95 pupils.

Pahrā.—One of the CHAUBE JĀGĪRS in Central India, under the Political Agent in Baghelkhand, with an area of about 27 square miles, and a population (1901) of 3,535. The estate was granted in 1812 to Sālig Rām Chaube, son of Rām Kishan of Kālinjar. Maksudan Prasād, who was *jāgīrdār* in 1857, assisted the British to the utmost of his power. His successor, the present *jāgīrdār*, Rao Bahādur Rādha Charan Jū, succeeded by adoption in 1868, receiving powers in 1879. He was educated at the Rājkumār College at Nowgong. Of the total area, 6 square miles, or 22 per cent., are cultivated. The revenue is Rs. 13,000. A small force of 100 infantry, 10 cavalry, and 4 gunners with two brass cannon is maintained. The chief place is Chaubepur, situated in 25° 6′ N. and 80° 48′ E., 20 miles from Karwī station on the Jhānsi-Mānikpur section of the Great Indian Peninsula Railway. Population (1901), 878.

Paigāh Estates.—A group of estates in the Hyderābād State, comprising 23 *tāluks* dispersed over the Districts of Bīdar, Nander, Osmānābād, Gulbarga, Medak, Atrāf-i-balda, and Nizāmābād, and a few scattered villages in Aurangābād, Warangal, Mahbūbnagar, and Nalgonda. They consist of 1,273 villages and towns, with an aggregate area of 4,134 square miles and a total revenue of about 40 lakhs. These estates belong to the representatives of three deceased noblemen, Sir Asmān Jāh, Sir Khurshed Jāh, and Sir Vikār-ul-Umarā. The table on the next page shows details of the estates according to the Census of 1901.

The history of the Hyderābād *paigāh* nobles dates back to the reign of Akbar. Mullā Jalāl-ud-dīn, the founder of the family, came to

Shikohābād from Lahore during the reign of that emperor. His son, Muhammad Bahā-ud-dīn Khān, was appointed head of the treasury at Akbarābād (Agra) in Aurangzeb's reign. Muhammad Abul-Khair Khān, the founder's grandson, attracted the attention of Nawāb Asaf Jāh, with whom he came to the Deccan, and, after having served as deputy-Sūbahdar of Mālwā, finally settled at Hyderābād. In 1743 he was sent against Bāpu Naik, a Marāthā chief, who was levying *chauth* in these territories, and defeated him. Subsequently he held the deputy-Sūbahdārship of Khāndesh and Aurangābād. He died at Burhānpur in 1749, leaving an only son, Abul Fateh Khān, who received the title of Tegh Jang from Nawāb Nizām Alī Khān. Further distinctions and titles were bestowed upon him, among them being that of Shams-ul-Umarā, which became the family title. He commanded 10,000 cavalry, which formed the beginning of the *paigāh* forces, for the maintenance of which the estates were originally granted. Abul Fateh Khān died at Pāngal while accompanying the expedition against Tipū, and was succeeded by his son, Muhammad Fakhr-ud-dīn Khān, who received his grandfather's name of Abul-Khair Khān. In 1800 he married a daughter of the Nizām, and thus the family became allied for the first time to the ruling house of Hyderābād. In 1827 the title of Amīr-i-Kabīr, or 'premier noble,' was bestowed upon him. Fakhr-ud-dīn Khān was a great patron of learning, and a good mathematician, being the author of *Sitta-i-shamsia*, a work on physics, mechanics, astronomy, &c. He built the Jahān-numā and many other palaces, and died in 1855, leaving five sons.

Names.	Number of *tāluks*.	Area in square miles.	Number of villages.	Population, 1901.
Sir Asmān Jāh . .	7	1,232	396	265,194
Sir Khurshed Jāh .	8	1,512	468	268,902
Sir Vikār-ul-Umarā .	8	1,390	409	240,315
Total	23	4,134	1,273	774,411

The third son, Rafī-ud-dīn Khān, who succeeded his father as Amīr-i-Kabīr, was appointed co-regent with Sir Sālār Jang on the death of the Nizām Afzal-ud-daula Bahādur in 1869, the present Nizām being then only three years old. This office he held till his death in 1877, when his younger brother Rashīd-ud-dīn Khān succeeded him as co-regent, receiving the titles of Shams-ul-Umarā and Amīr-i-Kabīr. The *paigāh jāgīrs* and estates were subsequently divided between two branches of the family, one represented by Sir Asmān Jāh, a grandson of Fakhr-ud-dīn Khān, and the other by Rashīd-ud-dīn Khān, who died in 1881, leaving two sons, Sir Khurshed Jāh and Sir Vikār-ul-Umarā.

When the present Nizām attained his majority, he conferred the title of Amīr-i-Akbar on Sir Asmān Jāh. This nobleman became minister of Hyderābād in 1888, and after six years of office retired in 1893, and was succeeded as minister by Sir Vikār-ul-Umarā. Sir Asmān Jāh died in 1898, leaving an only son, Nawāb Muīn-ud-dīn Khān Bahādur, who is now the sole representative of this branch of the family. Sir Vikār-ul-Umarā resigned the office of minister in 1901, and died early in 1902, leaving two sons, Nawāb Sultān-ul-mulk Bahādur and Nawāb Walī-ud-dīn Khān Bahādur. Sir Khurshed Jāh, who survived his brother for only a year, has also left two sons, Nawāb Shams-ul-mulk Zafar Jang Bahādur and Nawāb Imām Jang Bahādur.

Pail Tahsīl.—*Tahsīl* in the Amargarh *nizāmat* of the Patiāla State, Punjab. *See* SĀHIBGARH.

Pail Town (or Sāhibgarh).—Head-quarters of the Sāhibgarh *tahsīl*, Amargarh *nizāmat*, Patiāla State, Punjab, situated in 30° 43′ N. and 76° 7′ E., 34 miles north-west of Patiāla town. Population (1901), 5,515. The town is of some antiquity, and tradition says that 700 years ago some Hindu Khattrīs of the Seoni section settled here at the suggestion of Shāh Hasan, a Muhammadan *fakīr*. In digging its foundations they found a *pāel*, or ornament worn by women on the feet, whence its name. In 1236 the rebellious Malik, Alā-ud-dīn Jāni, was killed at Nakāwān in the district of Pail by the partisans of the Sultān Raziya, daughter of Altamsh. In the time of Akbar the district was a *pargana* of Sirhind. The town is an important religious centre, famous for its tank, the Gangā Sāgar, and a temple of Mahādeo, called the Dasnām kā Akhāra. It also possesses some fine buildings, and its position on an elevated site gives it an imposing appearance. Its trade is inconsiderable, but country carts and carved doorways are made in some numbers. The town contains a high school and a dispensary.

Pailānī.—Northern *tahsīl* of Bāndā District, United Provinces, conterminous with the *pargana* of the same name, lying south of the Jumna, between 25° 32′ and 25° 55′ N. and 80° 14′ and 80° 40′ E., with an area of 362 square miles. The population fell from 88,544 in 1891 to 80,524 in 1901. There are 121 villages, but no town. The demand for land revenue in 1903–4 was Rs. 1,49,000, and for cesses Rs. 23,000. The density of population, 222 persons per square mile, is slightly above the District average. The Ken, after forming part of the western boundary, turns eastwards and crosses the *tahsīl* till it joins the Jumna. The *tahsīl* contains a good deal of light soil, and near the Jumna there are deep ravines. In 1902–3 the area under cultivation was 188 square miles; there is practically no irrigation, but the Ken Canal, when completed, will serve part of this *tahsīl*.

Painā.—Town in the Deoria *tahsīl* of Gorakhpur District, United Provinces, situated in 26° 16′ N. and 83° 47′ E., on the left bank of the Gogra. Population (1901), 5,029. The inhabitants plundered a Government commissariat train during the Mutiny, in punishment for which the village was confiscated and bestowed on the Rājā of Majhaulī. Most of the inhabitants are boatmen, who live by conveying traffic along the Gogra between Barhaj and Patna. A primary school has 81 pupils.

Paingangā.—River in Berār and Hyderābād. *See* PENGANGĀ.

Paithan Tāluk.—Southern *tāluk* of Aurangābād District, Hyderābād State, with an area of 453 square miles. Its population in 1901, including *jāgīrs*, was 57,021, compared with 57,133 in 1891, the decrease being due to the famines of 1897 and 1899–1900. The *tāluk* contains one town, PAITHAN (population, 8,638), the head-quarters; and 142 villages, of which 12 are *jāgīr*. The land revenue in 1901 was 2·1 lakhs. The river Godāvari forms the southern boundary, and the *tāluk* is composed of black cotton soil.

Paithan Town.—Head-quarters of the *tāluk* of the same name in Aurangābād District, Hyderābād State, situated in 19° 28′ N. and 75° 24′ E., on the north bank of the Godāvari. Population (1901), 8,638. Paithan, the Pratisthān of the ancients, is one of the oldest cities in the Deccan, and is associated with many historic events. Asoka sent missionaries to the Petenikas, who were probably the inhabitants of the country round this place, while inscriptions of the second century B.C., in the caves at Pitalkhara near Chālīsgaon, refer to the king and merchants of Pratisthān. According to Ptolemy this was the capital of Pulumāyi II, the Andhra king (138–70), and the author of the *Periplus* describes it as a great centre of trade. Paithan is said to have been the birthplace and capital of Sālivāhana, with whom is connected the era that bears this name; but it is probable that Sālivāhana is a corruption of Sātavāhana, the title of the Andhra kings. Almost all traces of the ancient city have disappeared. The modern town contains numerous Hindu temples with exquisite wood-carvings. The sect of Mānbhau was founded at Paithan about the middle of the fourteenth century. The tenets of this sect prescribe the exclusive worship oi Krishna, the disregard of all caste rules, and a life of mendicancy. Some of the present followers of the creed follow ordinary pursuits, while those who adhere to the stricter rule wander about as beggars, clothed in black. (*See* RĪTPUR.) Silk and cotton *sārīs* and other silk fabrics are made at Paithan, which is a trade centre of some importance.

Pākaur Subdivision.—Eastern subdivision of the Santāl Parganas District, Bengal, lying between 24° 14′ and 24° 49′ N. and 87° 23′ and 87° 55′ E., with an area of 683 square miles. The western portion of

the subdivision is a sharply defined belt of hilly country stretching southwards; it contains some cultivated valleys, but much of the land is rocky and sterile. The eastern portion is a flat alluvial country, where rice is largely cultivated. Its population in 1901 was 238,648, compared with 230,256 in 1891. It contains 1,055 villages, of which PĀKAUR is the head-quarters; but no town. The subdivision, which has a density of 349 persons per square mile, contains part of the sparsely inhabited Dāman-i-koh Government estate, but the Pākaur *thāna* in the east is fertile and densely populated.

Pākaur Village.—Head-quarters of the subdivision of the same name in the Santāl Parganas District, Bengal, situated in 24° 38′ N. and 87° 50′ E. Population (1901), 1,519.

Pākhāl Tāluk.—*Tāluk* in Warangal District, Hyderābād State, with an area of 1,320 square miles. The population in 1901, including *jāgīrs*, was 39,030, compared with 36,719 in 1891. It is very thinly populated, owing to large forests and a malarious climate. The *tāluk* contained 195 villages, of which 3 are *jāgīr*, Narsampet (population, 1,803) being the head-quarters. The land revenue in 1901 was 1·2 lakhs. In 1905 some villages were added from the Warangal *tāluk*, and the northern portion became a separate *tāluk* called Tārvai. The PĀKHĀL LAKE, 13 square miles in area, is situated 8 miles east of Narsampet. The river Muner flows out from this lake. Rice is largely grown near tanks. The aboriginal tribes of Gonds and Koyas numbered 4,696 and 4,826 respectively in 1901.

Pākhāl Lake.—An extensive lake in Hyderābād State, situated in 17° 57′ N. and 79° 59′ E., in the Pākhāl *tāluk* of Warangal District, and enclosed on the north, south, and east by ranges of low and densely wooded hills. It was made by throwing a dam across the Pākhāl river, which here cuts its way between two low hills. It is the largest artificial piece of water in the State, the length and breadth being 8,000 and 6,000 yards, while the dam is more than 2,000 yards long, and the water covers an area of nearly 13 square miles. Several channels convey water from the lake to some distance for irrigation. At the centre of the dam are the ruins of a small pavilion known as the *chabūtra* of Shitāb Khān. The lake abounds with fish, otters, and crocodiles, and the surrounding country contains game of all descriptions. The average depth of the water is between 30 and 40 feet.

Pakhli.—An ancient *sarkār* or district of the Mughal *Sūbah* of the Punjab, now included in the Hazāra District of the North-West Frontier Province. Pakhli roughly corresponds with the ancient Urasā, the Ἄρσα or Οὔαρσα which Ptolemy places between the Bidaspes (Jhelum) and the Indus. Its king was named Arsakes in the time of Alexander. Hiuen Tsiang found it tributary to Kashmīr. In the Kashmīr chronicle called the *Rājatarangiṇī*, it appears, now as a

separate kingdom, now as tributary to that State. In it lay Agror, the ancient Atyugrapura. In Bābar's time this tract was held by the Khakha and Bambha tribes, whose chiefs had been the ancient rulers of the country east of the Indus, but had been driven out by the Gībari Sultāns of Bājaur and Swāt; and the tract derives its name from Pakhli, one of these conquerors. In the *Ain-i-Akbarī* it is described as bounded on the east by Kashmīr, on the south by the country of the Gakhars, on the west by Attock, and on the north by Kator (Chitrāl). Under Durrāni rule Saādat Khān was chosen as chief of Pakhli, then a dependency of Kashmīr. He founded the fort of Garhi Saādat Khān, which was the head-quarters of Azād Khān's rebellion against Tīmūr Shāh. Early in the nineteenth century Pakhli comprised three districts: Mansehra in the south and south-east, Shinkiari (subdivided into Kandhi and Maidān) in the north-east, and Bhīr-Kand in the centre. The valleys of Kāgān, Bhogarmang, and Agror were dependent on it.

Pakokku Chin Hills.—Administered area in Burma. *See* CHIN HILLS, PAKOKKU.

Pakokku District.—District in the Minbu Division of Upper Burma, lying between 20° 48′ and 22° 50′ N. and 93° 59′ and 95° 24′ E., with an area of 6,210 square miles. It is pear-shaped, tapering off towards the north, and is bounded on the north by the Upper and Lower Chindwin Districts; on the east by the Chindwin and Irrawaddy rivers, which separate it from Sagaing and Myingyan Districts; and on the south by Minbu District; the lofty barrier of the Chin Hills forms its entire western border. The District is divided into two roughly equal parts east and west by the masses of the Pondaung and Tangyi ranges, which rise to about 3,000 or 4,000 feet in the north, and diminish in the south to about 2,000 feet. In the extreme west between the Pondaung and the Chin Hills lies a long narrow valley, running north and south, and divided towards its southern end by a watershed. The country to the north of this divide is drained by the Myittha, which rises in the Pakokku Chin Hills, enters the District from the west, and flows northwards into the Upper Chindwin District, and by the Myittha's southerly affluent, the Maw. The valley to the south of the watershed is for the most part drained by the Yaw river and its numerous tributaries. East of the Pondaung is a strip of country, 15 miles in width in the north and widening to 45 miles in the south, bounded on the east by the Tangyi hills, which run in a general southerly direction right down the centre of the District. The whole of it is watered by the Yaw river, which comes in from the west, bends southwards, and flows into the Irrawaddy in the extreme south of the District. North of the point where the Yaw enters this strip is the valley of the Kyaw;

Physical aspects.

south of this point the ground rises from the river into a mass of hills and narrow valleys, only the southern edge of which is inhabited to any extent. To the east of the central stretch of hill and valley the country varies considerably. Near the Irrawaddy and Chindwin are large alluvial plains, transformed in places into lagoons by the annual rise of the rivers. Behind these plains the surface rises gradually, and becomes more and more broken as it approaches the hills, the whole area being arid, and water being very difficult to obtain. In this portion of the District is a small isolated range running north and south, and culminating in the Shinmadaung, 1,757 feet in height, about 20 miles due north of Pakokku town.

The eastern portion is covered with the alluvium deposited by the Irrawaddy and Chindwin. On the west of the Irrawaddy soft sandstones of Upper Tertiary (pliocene) age occupy a large area; they are characterized by the presence of fossil wood in large quantities, and in the Yaw Valley by mammalian bones. On the right bank of the Irrawaddy opposite Pagan the miocene (Pegu) beds are brought up by an anticlinal fold, and form a long narrow ridge running north and south parallel with the river. It is here, in the neighbourhood of Yenangyat, that the petroleum area is situated. Twelve oil-sands have been recognized in this region, all occurring in the lower or Prome stage of the miocene beds.

The flora of the arid areas in the east of the District is of the type common to the dry zone of Upper Burma, and includes cactus and other vegetation that thrives without much moisture. In the hills in the west bamboos and teak are common, and stretches of pine forest occur on the higher ridges.

Barking-deer, *sāmbar*, bears, wild hog, leopards, *tsine* or *hsaing* (*Bos sondaicus*), and *pyaung* (bison) are always to be found in the jungles of the District. Wild elephants often appear on the slopes of the remoter ridges, and the thick forests which clothe the hill ranges are a resort for tigers.

The dry part of the District east of the Pondaung is healthy, but hot. West of the Pondaung the rainfall is much heavier, and the heat is not so oppressive; but during the rains dense fogs are frequent in the valleys, which are excessively malarious, especially at the beginning and end of the wet season. Few visitors escape fever, and the residents themselves are not free from this scourge. What is known as Yaw fever is of an even more virulent type than the well-known fever of Arakan, and frequently attacks those who have returned to the valleys from the healthier parts of the District. The cold season is crisp and pleasant; but during April, May, and June the thermometer in the dry parts rises considerably above 100°, as much as 107° being by no means an uncommon record. A temperature of 118°, recorded

in the Pakokku courthouse, has so far been looked upon as the maximum.

The rainfall in the dry parts of the District is light and capricious; and here there is always a great scarcity of water, which in many places has to be carted for miles. The villages in the interior of the Pakokku and Myaing townships, particularly in the latter, have to depend almost entirely on tanks for their water-supply. West of the Pondaung the rainfall is much higher, but the distribution is uneven; the Kyaw valley enjoys a fairly ample supply, while the Gangaw township receives somewhat less, and the share of the Tilin township is even smaller. The average of the five years ending 1902 was 23 inches in Pakokku, 35 inches in the central portion (Pauk), and 48 inches in the Myittha valley (Gangaw).

History.

Prior to the annexation of Upper Burma, Pakokku was only a small fishing village, and its *thugyi* was under the control of the *wun* of Pakangyi. Though legends give what seem obviously fanciful origins for its name, it is not even mentioned in old maps, and the Irrawaddy Flotilla steamers only commenced to make it a place of call of recent years. Formerly all steamers called at Kunywa, 4 miles above Pakokku, where one of the branches of the Chindwin river joins the Irrawaddy, as for a long time Pakokku was cut off from the main channel by a huge sandbank, and Kunywa was then the main trading centre. In 1885, however, the sandbank disappeared, the river resumed its old course opposite Pakokku, and from that time trade steadily found its way thither, while Kunywa shrank into an unimportant village. The rise and growth of Pakokku have been particularly marked since the British occupation.

Under Burmese rule the Pakangyi *kayaing* corresponded with the present Pakokku District, and included the *wun*-ships of Pakangyi, Yaw Lemyo, and Pagyi Taik. At the time of annexation the area now forming the District was part of Pagan and Myingyan. During 1886 it was in a very unsettled state, as the greater part of it was dominated by the Shwegyobyu prince, who had been joined by the local Burman official, the *Kayaingwun* of Myingyan. A column was sent up in 1886 to deal with the insurgents, civil officials were stationed at Pakangyi, and two small posts were built at Pakokku and Yesagyo. The rebels were restrained to a certain extent by a military post at Myaing, but this part of the District was not at peace till a post was established at Pakangyi. The Pagan District was abolished and the Pakokku District formed in 1888 with its head-quarters at Pakokku. The Yaw country in the west was still unsettled even then, being overrun by two of the Shwegyobyu pretender's adherents, an influential local official called Ya Kut and a dacoit leader called Tha Do. Both were got rid of, however, during the course of the year.

Old pagodas abound in the District. The most noticeable in the neighbourhood of Pakokku are the Shwegu pagoda in the town itself, the Tangyiswedaw pagoda opposite Pagan on the Irrawaddy, and the shrines at Kunywa, Shinmadaung, and Thamaing. The first mentioned is supposed to occupy the site of the shrine erected by Alaungsithu, king of Pagan, over the grave of his queen, who died in childbirth. Grants of *wuttugan* land were made in 1887 to the trustees of the Tangyiswedaw pagoda, as well as to those of three famous images of Gautama known as the Sithushin, the Shinmadaung, and the Datpaung Myezu at Pakangyi in the Yesagyo township. The Tangyiswedaw pagoda is said to have been erected by Anawrata of Pagan to enshrine a tooth of Gautama brought by him from China; the three Pakangyi images are of sandal-wood, and date back to the early years of the twelfth century. They are reputed to have been put up by Narapadisithu, the famous warrior king of Pagan. They were removed to Mandalay in 1884, but were restored to Pakangyi two years later. Opposite Thamadaw in the Pauk township, on the west bank of the Yaw river, are two famous pagodas, the Shwepaunglaung and Shwemoktaw, which mark the site of a small pagoda said to have been erected by Dhamathawka, king of Pagan in 1091. They were restored by Narapadisithu a century later, and the anniversary of their restoration in the month of Tabaung used to be regularly celebrated by a festival till the time of the British occupation. The festival is now being revived.

Population.

The population increased from 311,959 in 1891 to 356,489 in 1901. Its distribution in the latter year is shown in the following table:—

Township.	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Pakokku	386	1	223	68,344	177	− 4	18,158
Yesagyo	564	...	238	87,797	156	+ 63	23,950
Myaing	825	...	295	71,976	87	+ 53	14,260
Pauk	1,490	...	190	41,021	28	+ 12	8,223
Saw	1,200	...	117	19,868	17	− 11	5,066
Seikpyu	559	...	152	31,100	56	− 34	4,527
Gangaw	698	...	118	24,200	35	+ 7	6,069
Tilin	488	...	120	12,183	25	+ 11	2,744
District total	6,210	1	1,453	356,489	57	+ 14	82,997

The table shows that there has been a slight increase since 1891 in the townships bordering on the Chin Hills in the north-west of the District; a diminution in the southern townships, from which the people

appear to have moved to some extent to the better irrigated tracts in the north of Minbu; and a substantial rise in the north-east, which has had the benefit of immigration from Myingyan and elsewhere. In the valleys of the Irrawaddy and Chindwin the population is dense, but in the hills to the west the villages are scattered. Burmese is spoken by 96 per cent. of the people.

The majority of the population is Burman or quasi-Burman. About 6,500 Chins occupy the western townships in the valleys of the Yaw and Myittha rivers. The Taungthas, who numbered 5,700 in 1901, inhabit the Yaw country and are peculiar to the District. In dress the men resemble the Burmans, but the women are distinguished by a white petticoat and a dark plaid sash of cotton worn under the jacket round the body from chest to hips. Their dialect is distinct from that of the other residents of the Yaw tract, and contains words which have an affinity with the Baungshe or Lai dialect of the Chins. They profess both Buddhism and *nat*-worship, are industrious, and make good agriculturists. No very satisfactory theory as to their origin has yet been put forward. The Yaws of the same region, who speak or spoke a dialect of their own, are now practically indistinguishable from their Burman neighbours. They have a reputation as magicians. Natives of India numbered in 1901 only 1,997, Hindus predominating. More than half of this total are engaged in trade in Pakokku town, or have found employment in the Yenangyat oil-fields as traders and coolies. The number of persons returned as directly dependent on agriculture in 1901 was 221,494, or 62 per cent. of the total population. Of this number, 50,562 in the western hill areas were dependent on *taungya* cultivation.

There are less than 200 Christians, of whom 106 are natives. The only Christian mission is that of the Wesleyans at Pakokku town.

Agriculture.

The alluvial soil is rich in the riverain and island lands, which produce peas, chillies, tobacco, gram, beans, and a number of other vegetables. In the highlands away from the river it is sandy in composition, with an admixture of red clay and gravel, and fit for *ya* cultivation only. The surface of the country is in general undulating and hilly, abounding in ravines and nullahs leading into the various streams. The system of cultivation is uniform throughout the District. The fields are tilled with a four-toothed harrow, lengthwise once, then diagonally once, and again breadthwise once. After this the surface is treated with a three-toothed harrow, first diagonally, then lengthwise or breadthwise, and again diagonally; finally the soil is made even with the harrow stock. For paddy-fields wooden harrows are used with teeth 8 inches long; for upland fields the length of the teeth is increased to 12 inches.

The crops are of the ordinary dry zone kind. *Kaukyin* (early) rice,

maize, early sesamum, and *taungya* rice are sown in May and June and reaped in December. For the *kaukkyi* rice crop operations commence in June and finish in January, while *lu* (millet), cotton, *jowār*, late sesamum, wheat, and gram are sown from July to October and reaped from December to February. The last named is a specially important staple in Pakokku. Maize is grown to a great extent, not only for the sake of the grain, but for the inner leaves of the sheath, which are used as wrappers for cheroots. This substance when ready for the market is called *pet*, and large quantities of it are exported. The *kyun* (or island) crops are sown from September to December in the rich alluvial soil the rivers leave behind them as they fall, and are reaped in March and April. They consist of various kinds of pulse, tobacco, and vegetables. The *mayin* or hot-season rice crop is planted from December to February in low-lying inundated hollows, and reaped in March and April.

The following are the main agricultural statistics for 1903-4, in square miles:—

Township.	Total area.	Cultivated.	Irrigated.	Forests.
Pakokku	386	124	...	3,785
Yesagyo	564	134	2	
Myaing	825	215	...	
Pauk	1,490	42	6	
Saw	1,200	23	9	
Seikpyu	559	107	3	
Gangaw	698	22	1	
Tilin	488	6	1	
Total	6,210	673	22	3,785

The staple crop is *jowār*, which covered 319 square miles in 1903-4, and forms the chief means of subsistence of the inhabitants of the poorer parts of the District. Rice, the food-grain of the people in the towns and the richer rural areas, was grown on 157 square miles. Gram occupied 30,000 acres, between one-third and one-half of the total for the whole Province. Pulse of various kinds covered about 33,000 acres, maize 23,200, and sesamum 32,600; and 4,900 acres were under tobacco. Garden cultivation is but little practised; but some betel-vines are grown in the Yesagyo township.

Cultivation is being extended generally; but it varies with the rainfall of the year, and depends to some extent on the manner in which the islands left by the river as it falls form in the channel. This island land is eagerly sought by the villagers for the cultivation of rice, maize, wheat, tobacco, and various kinds of vegetables, and differs from year to year in position and extent. The local cultivators do nothing to improve the quality of their crops, and there has been no experimental cultivation to speak of in the District. American maize was grown for

a time tentatively, but the husk proved too coarse for cheroot-covers. Virginia and Havana tobacco have also been tried in some parts, but can command no market value, as the flavour is disliked by the Burmans. Advances are made under the Agriculturists' Loans Act to villagers who have lost their plough cattle by disease, or have suffered in consequence of a bad harvest. The people appear fully to understand and appreciate the advantages to be derived from these loans, which during the past few years have averaged about Rs. 10,000 annually.

There are no special breeds of cattle or other live-stock; but the District produces fairly good beasts, and about 500 head of cattle are exported annually to Lower Burma, where they are readily sold for high prices. No special grazing grounds are set apart for cattle, the jungles near the villages supplying all that is needed for the greater part of the year, though in the interior, where fodder and water are scarce, the feeding and watering of the live-stock is by no means an easy matter in the hot season.

Channels or canals are dug by the villagers to irrigate their fields from the beds of the Yaw and Myittha rivers. The level of the streams is raised by means of a dam constructed of branches of trees and plaited bamboo work, and plastered over with mud and stones. The stream may carry away the dam from time to time, but the agricultural community re-erect the obstruction, each cultivator who has irrigable land subscribing his quota of labour. An artificial water-way, known as the Saw *myaung*, was constructed in the Yesagyo township by the people about forty years ago, to let the water from the Chindwin river on to their lands. It was in time neglected and allowed to silt up, but on a representation from the villagers in 1903 a portion of it was redug near Pakangyi with satisfactory results. This canal irrigates a large natural depression about 8 miles by 2, extending near the river from Yesagyo to Kunywa in the Pakokku township. Tanks and wells are not utilized for irrigation purposes. The area irrigated in 1903–4 was 22 square miles, practically all rice land, of which 19 square miles drew their supplies from private canals. About two-thirds of the irrigated area lies in the Pauk and Saw townships, the rest being situated for the most part in Yesagyo and Seikpyu. There are fisheries in the Pakokku, Seikpyu, and Yesagyo townships, formed by the overflow from the Irrawaddy and the Chindwin. They furnish most of the fishery revenue, which in 1903–4 amounted to nearly Rs. 11,000.

Forests.

In the Myaing and Pakokku townships, and over the greater part of the Seikpyu township, forest vegetation is not prolific. What there is belongs to the class generally known as dry forest, with stunted and scrubby growth. Farther to the north and west the forest passes gradually into the upper mixed class,

and becomes moister, but is dotted with patches of *ingyin* (*Pentacme siamensis*). In the drainage of the Yaw, teak is plentiful not only on the lower slopes of the Chin Hills, but also on the watershed of the Yaw and Maw rivers and on the Pondaung range north of 21° 30′ N.; natural regeneration, however, is not good. All over this area cutch is plentiful, and *padauk* (*Pterocarpus indicus*) is well represented. A noticeable feature of the Yaw forests is the prevalence of *than* (*Terminalia Oliveri*). The Gangaw forests to the east of the Maw and Myittha rivers are very rich in teak; but to the west of these streams large stretches of *indaing* or *ingyin* forest occur, and teak is confined to the beds of the streams. *Padauk*, cutch, and *pyingado* (*Xylia dolabriformis*) are plentiful in the Gangaw subdivision, and pines are found in places on the hills. Throughout the District *myinwa* (*Dendrocalamus strictus*) is the prevailing bamboo, but *lin* and *kyathaung* (*Bambusa polymorpha*) are found here and there on the moister slopes. The Maw and Myittha are useful for floating timber; but the Yaw, owing to silting in its lower reaches, is very uncertain. The forest division contains 1,266 square miles of 'reserved,' 51 of protected, and 2,583 of unclassed forest. Of the 'reserved' forest, 115 square miles are in the Chin Hills outside the limits of the District. The gross forest receipts in 1903-4 were Rs. 1,22,000, and the net revenue Rs. 56,000.

Minerals.

Earth-oil is found in workable quantities at Yenangyat on the right bank of the Irrawaddy, almost opposite Pagan, and has also been traced in small deposits elsewhere in the District. The Yenangyat oil-wells were worked until twelve years ago by a few Burmans. Women then did most of the extraction, while men performed the necessary digging; but the process was clumsy and the out-turn inconsiderable. The oil-bearing tract has since that date been surveyed, and divided into blocks, each one mile square. The oil-fields at Yenangyat are now being worked by three concerns, whose total working staffs consist of about 20 Europeans and 600 Burmans and natives of India. In all, 32 blocks are at present held by the Burma Oil Company under leases from Government, 11 by the Rangoon, and 8 by the Minbu Oil Company. Prospecting licences have also been granted to the Minbu and Burma Oil Companies and to others. The royalty paid in 1901-2 on the oil extracted amounted to Rs. 1,43,000. The industry is expanding rapidly, and in 1903-4 the petroleum revenue had risen to Rs. 2,93,000. Coal crops out at many places on both sides of the Pondaung range and also near Myaing, but all the seams are too shallow to be worth working. There are salt springs near Yemyet, about 17 miles west of Pakokku, near Pindaung, west of Pauk, and at several places in the Yaw country; but the out-turn

is insignificant. Sandstone is quarried at Taungu near the Shinmadaung, and steatite in the neighbourhood of Saw. The former yields a royalty of Rs. 1,000 to Government annually. Sandstone from the Taungu quarries is found all over Pakokku, and in many adjacent Districts, in the form of paving-stones, well-copings, pagoda ornaments, troughs, and the like. There are steatite or soapstone quarries on the Kadin stream about 6 miles west of Saw. They are difficult of access and are now being worked by a native of India. Near Myaing are traces of old iron-workings, but the ore is not judged worth extracting now. Iron used to be mined at Tonbo near Chaungzongyi in the Myaing township, and also at Tonbo in the Wetthet circle of the Tilin township; and an attempt has been made to revive the iron industry at the latter place, but without success. Gold-washing on a small scale was carried on up to the time of annexation in the Bahon stream at Chaungzongyi in the north of the District.

Trade and communications.

The principal handicrafts are boat-building at Pakokku, and cart-building at Myotha in the Myaing township. The boat-building industry is very extensive, and supplies the wants of a good many of the Irrawaddy population. Myotha furnishes carts to the whole of Pakokku, as well as to adjacent areas. Hand rice-mills and brass-work are turned out at Pakokku town, and cotton- and silk-weaving is carried on to some extent in various parts of the District. The silk industry is mainly in the hands of the Taungthas and Chins of the Gangaw subdivision, but is not profitable, as the silk turned out is coarse and inferior in quality to that imported from Mandalay. The dyeing and weaving of the well-known Yaw waistcloths is, however, carried to the length of a fine art, for which the people in those parts of the District are famous all over Burma. Silk as well as cotton enters into the composition of these garments. The dark-blue dye that forms one of their chief characteristics is prepared from a plant of the indigo species which is cultivated locally. The principal products of the brass-workers of Pakokku are small bells and lime-boxes, made of different alloys of brass variously arranged. When ready for the final process they are placed in a heated earthen vessel underground, when the colour of the various alloys becomes changed, apparently by oxidization, the result being a neat inlaid pattern. Similar work is also produced in alloys of gold or silver; but there is no ready market for it, and the workers cannot afford to sink capital in unsold goods. Pottery and wood-carving are carried on at Pakokku town, but not to any great extent. A good deal of mat-weaving is done, but only for local use. The jaggery industry is an important one. Jaggery sugar is manufactured by boiling down the

unfermented juice of the toddy-palms, which abound in the drier areas. The male trees are the first to be tapped, in February and March. In May the female trees begin to fruit and their sap is then drawn off. There is an oil refinery at Yenangyat, worked by the Burma Oil Company, and another at Kywede village in the Pakokku township, owned by a Burman.

All the trade of the Yaw country and a good deal of that of the Chindwin valley passes through Pakokku. The principal exports are timber, hides, petroleum, cutch, *yawpet* (the leaves or covering of the maize cob), and jaggery. Timber, petroleum, and hides are sent to Rangoon for exportation; cutch and *yawpet* to Lower Burma for consumption. The principal imports are cleaned rice, *ngapi*, and salted fish from Lower Burma, and foreign salt from Rangoon. The centre of trade is Pakokku town, whence goods are shipped by the Irrawaddy Flotilla steamers or distributed overland through the District. A certain amount of bartering goes on between the Chins and the people of the plains, beeswax, honey, lac, and a kind of cane called *wanwe* being exchanged for salt, fowls, and Burmese cotton blankets.

There are no railway lines. The chief roads maintained from Provincial funds are: the Pakokku-Kan road, 166½ miles; the Saw-Zigat road (Saw to Kawton), 43 miles; the Haka-Kan road (from Yeshin camp to Kan), 11½ miles; the Saw-Kyetchedaung mule track, 19 miles; the Pauk-Yawdwin road, 53 miles; the Pakokku-Myaing road (via Kaing), 26 miles; the Pakokku-Yesagyo road, 26 miles; and the Mindat-Sakan Kanpetlet mule track, 32 miles. Those maintained from the District fund include the Kanhla-Myitche road, 14 miles; the Pakokku-Lingadaw road, 27 miles; the Myaing-Lingadaw road, 18 miles; the Yesagyo-Lingadaw road, 17 miles; and the Wadin-Sinzein road, 25 miles. All these are unmetalled, but bridged and drained. The Irrawaddy, the Chindwin, and the Myittha are all navigable waterways. The Myittha is navigable by country boats during the greater part of the year, from the Chindwin river up to Minywa a little south of Gangaw, and occasionally boats go still farther on into the Maw stream up to a village called Kinban. The distance from Kalewa (at the mouth of the Myittha in the Upper Chindwin District) to Minywa is about 180 miles by river, and from Minywa to Kinban about 15 miles. The steamers of the Irrawaddy Flotilla Company ply regularly on the Irrawaddy and the Chindwin. The express boats call at Pakokku town twice a week, and a steam ferry runs daily between Pakokku and Myingyan. The Chindwin steamers leave Pakokku for Kindat weekly, and for Monywa twice a week.

Though the eastern half of the District is a typical stretch of dry

zone country, there is no record of the occurrence of any serious famine. Scarcity has sometimes been experienced; indeed, when regard is had to the nature of the rainfall in the eastern tracts an occasional failure of crops owing to drought is inevitable, but any distress in the past it has been found possible to meet by means of a remission of taxation.

Administration.

For administrative purposes the District is divided into three subdivisions: Pakokku, comprising the PAKOKKU, YESAGYO, and MYAING townships; Pauk, comprising the PAUK, SAW, and SEIKPYU townships; and Gangaw, comprising the GANGAW and TILIN townships. The head-quarters staff is of the usual type. The Public Works division, with head-quarters at Pakokku, includes the Pakokku Chin Hills, there being two subdivisions within the District, Pakokku and Pauk. The Yaw Forest division, with head-quarters at Pakokku, also includes the Pakokku Chin Hills. An assistant commandant of military police is stationed at Pakokku.

The treasury officer, Pakokku, is also additional judge of the Pakokku township court, but there are no specially appointed judicial officers; the District officers—Deputy-Commissioner and subdivisional and township officers—perform judicial in addition to executive duties. The crime of the District presents no special features.

The revenue of Pakokku under Burmese rule consisted almost entirely of *thathameda*. Royal lands, it is true, sometimes paid rent, but little of it ever reached the royal coffers at Mandalay. The revenue now levied on state land is assessed at a share of the value of the produce of different kinds of crops—rice at one-fifth and *jowār* at one-eighth. On *kyun* (or island) crops acre rates are levied, varying from Rs. 2 an acre on peas, *jowār*, maize, rice, and sesamum, to Rs. 7 an acre on sweet potatoes and onions. Variations in the land revenue receipts are brought about by the appearance and disappearance of islands in the Irrawaddy. There are a considerable number of *wuttugan* lands, i. e. lands dedicated in Burmese times to pagodas, the revenue of which is devoted to the upkeep of the shrines; and of *thugyisa* lands, or lands held by the village headmen rent-free during their term of office. Regular settlement operations are now in progress.

The growth of the revenue since 1890–1 can be gathered from the following table, which gives figures in thousands of rupees:—

	1890–1.	1900–1.	1903–4.
Land revenue . .	77	1,62	1,29
Total revenue . .	7,38	10,69	12,30

The main source of revenue is *thathameda*, the demand for which

in 1903–4 amounted to Rs. 7,24,000, a figure a good deal higher than for any other District in Upper Burma.

The only municipality is that of PAKOKKU, constituted in 1887. Yesagyo used to be a municipality, but the board was dissolved in 1892–3. The District fund is administered by the Deputy-Commissioner. In 1903–4 its income, derived from various local receipts, amounted to Rs. 15,000, the main item of expenditure being public works (Rs. 10,000).

Under the District Superintendent are an Assistant Superintendent and two inspectors in charge of the police in the three subdivisions. There are 11 police stations and 17 outposts; and the sanctioned strength of officers and men is 407, including 4 inspectors, 1 chief head constable, 12 head constables, 31 sergeants, and 357 constables of all grades. The military police belong to the Magwe battalion. Their strength is 150 rank and file, distributed in the three subdivisional head-quarters. They are officered by an assistant commandant, one *sūbahdār*, and three *jemadārs* at head-quarters, and one *jemadār* at Pauk and Gangaw respectively.

The District jail at Pakokku has accommodation for 52 convicts and 20 under-trial prisoners. The only remunerative industry carried on is wheat-grinding for the military police. No carpentry or any other kind of industry is undertaken, and when there is no wheat-grinding the prisoners have comparatively little work to do; some are, however, employed in gardening. English and native vegetables are grown for the consumption of the prisoners, and some are sold in the local market to the public.

The proportion of literate persons in 1901 was 23·3 per cent. (46·8 males and 2·3 females). The number of pupils has risen from 1,949 in 1891 to 13,426 in 1901. In 1904 the District contained 8 secondary, 126 primary, and 737 elementary (private) schools, with an attendance of 11,818 (including 751 girls). The educational expenditure in 1903–4 amounted to Rs. 24,100, Provincial funds contributing Rs. 21,000 and municipal funds Rs. 600, the balance of Rs. 2,500 being met from fees and subscriptions.

There are four civil hospitals, with accommodation for 73 in-patients; and 14,917 cases, including 687 in-patients, were treated at these institutions in 1903, while 425 operations were performed. The combined income of the hospitals amounted in that year to Rs. 12,500, towards which Provincial funds contributed Rs. 6,300, municipal funds Rs. 3,700, and the District fund Rs. 1,500. Besides these, a military police hospital at Pakokku town contains 64 beds, and costs about Rs. 500 per annum.

Vaccination is compulsory only in the Pakokku municipality. In 1903–4 the number of persons successfully vaccinated was 7,602, representing 21 per 1,000 of population.

Pakokku Subdivision.—Eastern subdivision of Pakokku District, Upper Burma, comprising the PAKOKKU, YESAGYO, and MYAING townships.

Pakokku Township.—Township of Pakokku District, Upper Burma, lying between 20° 55′ and 21° 28′ N. and 94° 43′ and 95° 11′ E., along the right bank of the Irrawaddy, with an area of 386 square miles. The population was 71,106 in 1891, and 68,344 in 1901, distributed in one town, PAKOKKU (population, 19,456), the head-quarters, and 223 villages. Along the river bank the country is flat; inland it is undulating. The rainfall is very meagre, but the population is fairly dense. The area cultivated in 1903–4 was 124 square miles, and the land revenue and *thathameda* amounted to Rs. 1,85,000.

Pakokku Town.—Head-quarters of the District of the same name in Upper Burma, situated in 21° 20′ N. and 95° 5′ E., on the right bank of the Irrawaddy, a few miles below the point where the Chindwin runs into that river. It is a long straggling town of no great width, never extending more than three-quarters of a mile away from the stream, and thickly dotted with tamarind-trees. It is built on an alluvial bed, and there is a tradition that the river channel once ran where the town now stands. The eastern boundary of the urban area is a wide sandy nullah crossed by a bridge leading to a fine stretch of country, considerably higher than the native town, on which stands the civil station, with the courthouse, jail, and officers' residences. Two or three miles to the west of the town, along the river, the country lies low; and when the river is in flood the whole of this tract is inundated, the subsiding floods leaving extensive *jhīls*.

The history of the town dates from 1885, when the large sandbank which had till then cut it off from the river disappeared. In 1885–6 it was garrisoned by a company of native infantry in a stockade to the north, supported by two civil police outposts; and this force was greatly augmented during the disturbances of 1887, but was withdrawn when the country became quiet. The population of Pakokku in 1889 was estimated at from 5,000 to 8,000, but had increased to 19,972 in 1891, dropping slightly to 19,456 in 1901. It is thus, after Mandalay, the largest town in Upper Burma. The majority of the population are Burmans, but there are nearly 800 natives of India.

Pakokku is the great boat-building centre of Upper Burma. Most of the large cargo boats carrying rice to Lower Burma are built here. Till recently old-fashioned Burman designs have been adhered to; a new style of boat, called a *tonkin*, is now, however, being constructed by the local builders, resembling the ordinary cargo boat, but decked over and level keeled. It is used in the tidal creeks of Lower Burma. The principal local industries are silk-weaving, wood-carving, sesamum-oil pressing, and silver-work; and jaggery sugar is made from the

toddy-palms which abound in the District. Pakokku is the chief market for the Yaw and Chindwin trade, the imports consisting mainly of jaggery, hides, cutch, teak, and bamboos. The town is a regular port of call for the Irrawaddy Flotilla Company's steamers. The mail-boats leave for up-river stations as far as Mandalay and down-river stations as far as Rangoon twice a week, and for the Chindwin stations once a week. An additional service of two steamers a week plies to Monywa, and a daily launch goes to and from Myingyan.

Pakokku was constituted a municipality in 1887. The municipal receipts and expenditure during the ten years ending 1901 averaged between Rs. 38,000 and Rs. 39,000. In 1903-4 the income was Rs. 46,000, the principal sources of receipt being bazar rents (Rs. 20,000) and house tax (Rs. 11,100). The expenditure amounted to Rs. 48,000, the chief items being conservancy (Rs. 11,000) and roads (Rs. 7,000). The water-supply is obtained from the river and from wells. The municipality maintains 11 miles of metalled, and 8 miles of unmetalled roads. There is no municipal school, but the municipality gives Rs. 600 a year to the Wesleyan Anglo-vernacular school in the town, and also supports a hospital.

Pākpattan Tahsīl.—*Tahsīl* of Montgomery District, Punjab, lying between 29° 58′ and 30° 38′ N. and 72° 37′ and 73° 37′ E., with an area of 1,339 square miles. It is bounded on the south-east by the Sutlej. The population in 1901 was 121,776, compared with 111,971 in 1891. It contains one town, PĀKPATTAN (population, 6,192), the head-quarters, and 354 villages. The land revenue and cesses in 1903-4 amounted to Rs. 2,06,000. The *tahsīl* lies wholly in the lowlands which stretch from the southern edge of the central plateau of the Bāri Doāb to the right bank of the Sutlej. The western half, except for a narrow strip along the river, is a vast waste. The eastern half is more fully cultivated, owing to the irrigation from the Khānwāh and Sohāg and Pāra canals.

Pākpattan Town.—Head-quarters of the *tahsīl* of the same name in Montgomery District, Punjab, situated in 30° 21′ N. and 73° 24′ E., 29 miles south-east of Montgomery station on the North-Western Railway. Population (1901), 6,192. Pākpattan is the ancient Ajodhan, which probably derived its name from the Yaudheya tribe (the modern Johiyas). From a very early date it was a place of importance, as the principal ferry across the Sutlej and the meeting-place of the great western roads from Dera Ghāzi Khān and Dera Ismail Khān. The fort is said to have been captured by Sabuktagīn in 977-8 and by Ibrāhīm Ghaznivid in 1079-80. The town owes its sanctity and modern name, 'the holy ferry,' to the shrine of the great Muhammadan saint Shaikh-ul-Islām, Farīd-ul-Hakkwa-ud-Dīn, Shakar Ganj (1173-1265), which was visited by Ibn Batūta (1334). The town was besieged

by Shaikha, the Khokhar, in 1394, and in 1398 was visited by Tīmūr, who spared such of the inhabitants as had not fled, out of respect for the shrine of the saint. It was the scene of two of Khizr Khān's victories over generals of the Delhi court (1401 and 1405). The shrine of Bāba Farīd attracts crowds of worshippers, its sanctity being acknowledged as far as Afghānistān and Central Asia. The principal festival is at the Muharram.

The municipality was created in 1867. During the ten years ending 1902–3 the income averaged Rs. 7,200, and the expenditure Rs. 7,000. The income in 1903–4 was Rs. 8,400, chiefly derived from octroi; and the expenditure was Rs. 7,300. Pākpattan is a town of some commercial importance, importing wheat, cotton, oilseeds, and pulses from the surrounding villages, *gur* and refined sugar from Amritsar, Jullundur, and the United Provinces, piece-goods from Amritsar, Delhi, and Karāchi, and fruits from Afghānistān. The exports consist principally of cotton, wheat, and oilseeds. The town has a local manufacture of silk *lungīs* and lacquer-work. It contains a vernacular middle school and a dispensary. From 1849 to 1852 it was the head-quarters of the District.

Pāl State.—Petty State in KĀTHIĀWĀR, Bombay.

Pāl Village (originally called Rājāpur).—Village in the Karād *tāluka* of Sātāra District, Bombay, lying on both banks of the Tārlī in 17° 29′ N. and 74° 2′ E., about 20 miles north-west of Karād town. Population (1901), 3,157. It is chiefly remarkable for a temple of Khandoba, where a fair attended by about 50,000 people of all classes is held every year. The temple, which was built in the fifteenth century, stands on the site of a legendary appearance by the god Khandoba to a favourite devotee, a milkmaid named Pālai, in whose honour the village name was changed from Rājāpur to Pāl. The number of prominent historical families in the Deccan who have bestowed gifts on this temple shows the great veneration in which it is held. Every pilgrim entering the temple at the fair time has to pay a toll of ¼ anna. The priests are Guravs and Brāhmans, and connected with the temple are many Murlis or female devotees. The great fair is held in the month of Paush or December–January. The pilgrims usually camp in the bed of the Tārli, which at this time forms a large dry beach. The fair proper lasts three or four days, being the days during which the marriage ceremony of the god Khandoba is supposed to take place. Under Marāthā rule Pāl was a market town of some note on the main road from Sātāra to Karād. Pāl village and temple are closely connected with a celebrated exploit of Chitursing in February, 1799, in revenge for the defeat of his brother Sāhū II., the Sātāra Rājā. After worshipping at the temple with his small force of 600 infantry, he attacked Rāstia, who was encamped near Sātāra with a body of 2,000 or 3,000 men, and dispersed them.

Pālakollu.—Town in the Narasapur *tāluk* of Kistna District, Madras, situated in 16° 31′ N. and 81° 44′ E., on the Narasapur canal, 6 miles from Narasapur town and 29 from Nidadavolu, the nearest railway station. Population (1901), 10,848. The Dutch opened a factory here in the middle of the seventeenth century, and for some time it was the head-quarters of their establishments on this part of the coast. It fell to the English in 1783, but the Dutch remained in possession on payment of a small quit-rent till 1804. The place was restored to Holland by the convention of 1814, but was finally ceded to the British in 1825. The most interesting relic of the Dutch occupation is the little cemetery in the heart of the town, which contains inscriptions dating back to 1662. The cultivation of the Batavian orange and pummelo, introduced by the Dutch settlers, is still a feature of the place. Pālakollu is a flourishing town and the chief market of the Western Delta of the Godāvari, the trade being chiefly in fruit, rice, and cotton yarn. Local affairs are managed by a Union *panchāyat*.

Palāli.—Petty State in KĀTHIĀWĀR, Bombay.

Pālam.—'Crown' *tāluk* in the south of Parbhani District, Hyderābād State, with an area of 560 square miles. Including *jāgīrs*, the population in 1901 was 92,182, compared with 104,904 in 1891, the decrease being due to the famine of 1900. The *tāluk* contains two towns, GANGĀKHER (population, 5,007) and SONEPET (5,759), both being *jāgīr* towns; and 153 villages, of which 32 are *jāgīr*, and Pālam (3,306) is the head-quarters. The land revenue in 1901 was 3·2 lakhs. The Godāvari river forms the northern boundary.

Palāmau ('a place of refuge').—District in the Chotā Nāgpur Division of Bengal, lying between 23° 20′ and 24° 39′ N. and 83° 20′ and 84° 58′ E., with an area of 4,914 square miles. It is bounded on the north by Shāhābād and Gayā; on the east by Gayā, Hazāribāgh, and Rānchī; on the south by Rānchī and the State of Surgujā; and on the west by Surgujā and the Mirzāpur District of the United Provinces.

Physical aspects.

The District consists of a confused aggregation of hills, offshoots from the Chotā Nāgpur plateau, and of the valleys between them. The hills run in the main east and west, though many are at right angles to the general trend. They are highest in the south, where they adjoin the Surgujā plateau, and gradually decrease in size towards the north. The District comprises four distinct tracts, which are roughly conterminous with the four old fiscal divisions or *parganas*. By far the largest is *pargana* Palāmau, which forms the greater portion of the District, consisting of jungle-clad hills and fertile but narrow valleys. *Pargana* Torī is an undulating but in many places highly cultivated tract, with a few large isolated hills; until recently it formed part of the head-quarters subdivision of Rānchī District, and its tenures,

people, and customs are quite distinct from those of Palāmau. *Pargana* Belaunjā in its southern portion closely resembles Palāmau, but towards the north it sinks into an extremely fertile valley into which the Son yearly overspills. *Pargana* Japlā, in the extreme north of the District, is a tract almost devoid of hills and very similar to the alluvial portion of the District of Gayā. The Son flows along the northern border, but the most important river is the Koel. This rises in Barwe in Rānchī District, and after flowing nearly due west for about 24 miles, turns northwards, passing through the centre of Palāmau, and joins the Son not far from the old fort of Rohtāsgarh; its chief affluents are the Aurangā and Amānat. The Kanhar flows in a north-westerly direction along the Surgujā boundary, and eventually joins the Son in Mirzāpur District.

The characteristic formation of Palāmau is gneiss, of which all the more important hill ranges are composed. It is of extremely varied constitution, including granitic gneisses, mica schists, magnetite schists, huge beds of crystalline limestone, &c. Along the north-west boundary of the District is the eastern termination of a large outcrop of Bijāwar slates, which extends westward for nearly 200 miles through Mirzāpur and Rewah. The Lower Vindhyans, which rest unconformably upon the Bijāwars, are found along the valley of the Son, where representatives of the Garhbandh, porcellanic, and Khinjua groups are found; the first mentioned contains two subdivisions, a lower one consisting of conglomerates, shales, limestones, sandstones, and porcellanites, and an upper band of compact limestone of 200 or 300 feet in thickness. The rocks of the porcellanic group, which overlies the Garhbandh, are indurated, highly siliceous volcanic ashes; their thickness increases as they approach the former centres of volcanic activity in the neighbourhood of Kutumbā, Nabīnagar, and Japlā. The shales and limestones of the Khinjua group are mostly concealed by alluvium along the banks of the Son. As the Vindhyans are unfossiliferous, their geological age cannot be exactly determined, but there is reason to think that they may be as old as Cambrian.

The next formation, the Gondwāna, contains numerous fossil plants, which determine its age partly as upper palaeozoic and partly as mesozoic. It is of great economic importance on account of the coal and iron ore which it contains. It comprises in Palāmau the Mahādeva, Pānchet, Rānīganj, Barākar, and Tālcher divisions. The rocks of this formation generally weather into low undulating ground, but those of the Mahādeva group rise into lofty hills. The coal-seams are restricted to the Barākar and Rānīganj groups, which consist of alternating layers of shale and sandstone; the workable seams are found chiefly in the Barākar. The Pānchet and Mahādeva groups consist principally of sandstones, and the Tālcher mostly of shales;

the Tālchers, which are the oldest Gondwāna rocks, contain at their base a conglomerate, consisting of large boulders embedded in clay, which is supposed to be of glacial origin. The Aurangā, Hutar, and Daltonganj coal-fields are situated entirely in Palāmau, which also contains the western extremity of the large Karanpurā field. The boundaries of the coal-fields are usually faults, whose position is indicated by lines of siliceous breccia, and hot sulphurous springs are frequent along them. The best coal is that in the Daltonganj field.

Near the southern edge of the District, the lofty flat-topped hills known as *pāts* are capped by great masses of laterite, resulting from the decomposition of basaltic beds of the Deccan trap formation. The largest of these is the vast Neturhāt plateau west of the Koel river. A few intrusive dikes of the same formation occur in the Daltonganj and Hutar coal-fields.

Along the Son, especially below its confluence with the Koel, the rocks are concealed by deep alluvium, which merges into the alluvial formation of the Gangetic plain. Alluvial soil is scattered over many other parts of the District, and nearly everywhere contains in great abundance the calcareous concretions known as *kankar*[1].

The rice-fields and their margins abound in marsh and water plants. The surface of the plateau land between the valleys, where level, is often bare and rocky; but where undulating, is usually clothed with a dense scrub jungle, in which *Dendrocalamus strictus* is prominent. The steeper slopes are covered with a dense forest mixed with many climbers. *Sāl* (*Shorea robusta*) is gregarious; among the other noteworthy trees are species of *Buchanania*, *Semecarpus*, *Terminalia*, *Cedrela*, *Cassia*, *Butea*, *Bauhinia*, *Acacia*, and *Adina*, which these forests share with the similar forests on the lower Himālayan slopes. Mixed with them, however, are a number of characteristically Central India trees and shrubs, such as *Cochlospermum*, *Soymida*, *Boswellia*, *Hardwickia*, and *Bassia*, which do not cross the Gangetic plain. One of the features of the flowering trees is the wealth of scarlet blossom in the hot season produced by the abundance of *Butea frondosa* and *B. superba*.

The chief wild animals to be met with are tigers, bison, leopards, black bears, *sāmbar*, *chītra* (spotted deer), *chinkārā*, four-horned deer, barking-deer, *nīlgai*, antelope, and wild dogs. The Government 'reserved' forests form a shelter for game; and though tigers have

[1] Detailed descriptions of the Geology of Palāmau have been published in the *Memoirs of the Geological Survey*: the Hutar and Aurangā coal-fields, the gneiss, and the iron ores have been described by V. Ball, in vol. xv. part i; the Daltonganj coal-field by Th. Hughes in vol. viii, part ii; the Karanpurā coal-field by Th. Hughes in vol. vii, part iii; the Lower Vindhyans generally by F. Mallet, vol. vii, part i; and the volcanic rocks of that series by E. Vredenburg, vol. xxxi, part i.

probably diminished in number of late years, bison and deer have considerably increased, in spite of the ravages committed by wild dogs.

Palāmau enjoys a moderate temperature, except during the hot months of April, May, and June, when the westerly winds from Central India cause great heat, combined with very low humidity. The mean temperature increases from 74° in March to 86° and 94° in April and May, the mean maximum from 88° in March to 107° in May and the mean minimum temperature from 59° in March to 81° in June. During these months humidity is lower in Chotā Nāgpur than in any other part of Bengal, falling in this District to 57 per cent. in March, 46 per cent. in April, and 51 per cent. in May. The mean temperature for the year is 77°, falling to 61° during the cold season, when the minimum temperature is 47°. The annual rainfall averages 49 inches, of which 6½ inches fall in June, 14 each in July and August, and 8 in September.

History.

Reliable history does not date back beyond 1603, when the Raksel Rājputs were driven out by the Cheros under Bhagwant Rai, who took advantage of the local Rājā's absence at a ceremony at Surgujā to raise the standard of revolt. The Chero dynasty lasted for nearly 200 years, the most famous of the line being Medni Rai surnamed 'the just,' who ruled from 1659 to 1672 and extended his Rāj into Gayā, Hazāribāgh, and Surgujā. The erection at Palāmau of the older of the two forts which form the only places of historical interest in the District is ascribed to him; the other, which was never completed, was begun by his son. These Rājās apparently ruled as independent princes till between 1640 and 1660, when the Muhammadans made several attacks on them and forced them to pay tribute. In the latter year occurred the attack on Palāmau fort and its capture by Daud Khān, which forms the subject of a large picture (30 feet by 12) preserved by Daud's descendants and described in detail by Colonel Dalton in the *Journal, Asiatic Society of Bengal*, 1874. In 1722 the ruling Rājā, Ranjīt Rai, was murdered, and Jay Kishan Rai, descended from the younger son of a former Rājā, was placed upon the throne. A few years afterwards Jay Kishan was shot in a skirmish, and his family fled to Megrā in Bihār. Here they took refuge with one Udwant Rām, a *kānungo*, who in 1770 took Gopāl Rai, grandson of the murdered Rājā, to Patna and presented him to Captain Camac, the Government Agent, as the rightful heir to the Palāmau Rāj. Captain Camac promised the assistance of the British Government and, after defeating the troops of the ruling Rājā, gave a *sanad* for five years to Gopāl Rai and two of his cousins. From this time Palāmau was included in the British District of Rāmgarh. A year or two later, Gopāl Rai was sentenced to imprisonment for being concerned in the murder of the *kānungo* who had helped him to power.

He died at Patna in 1784, and in the same year died Basant Rai, who had succeeded to the *gaddi* on his imprisonment. Churāman Rai succeeded; but by 1813 he had become insolvent, and Palāmau was sold for arrears of revenue and bought in by Government for the amount due. Three years later old disturbances between the Kharwārs and Cheros were renewed, and Palāmau was given to the Deo family in Gayā as a reward for their services in helping to quell them. Their régime, however, was unpopular, and in a year the country was in open rebellion. So Government was again forced to take up the management of the estate, giving the Deo family as compensation a reduction of Rs. 3,000 in the Bihār revenue payable on their estates in Bihār. In 1832 the Kharwārs and Cheros again broke out in rebellion, but this rising was soon put down. There were no further troubles until the Mutiny of 1857, when the Kharwārs rose against their Rājput landlords; and the mutineers of the Rāmgarh Battalion, taking refuge in Palāmau, made common cause with Nīlāmbar and Pītāmbar Singh, two malcontent landholders. The 26th Madras Native Infantry and a portion of the Rāmgarh Battalion which had remained loyal defeated the insurgents at the Palāmau forts. Nīlāmbar and Pītāmbar Singh were taken prisoners and hanged. In 1834 Palāmau was included in the District of Lohārdagā (now Rānchī), and was only formed into a separate District in 1892.

Population.

The population of the present area increased from 423,795 in 1872 to 551,075 in 1881, to 596,770 in 1891, and to 619,600 in 1901. The striking increase between 1872 and 1881 is attributable partly to the greater accuracy of enumeration in 1881, and partly to the impetus given to enlightened management of estates, and consequently to the extension of cultivation, which followed the settlement of the Government estates made in 1869-70. The northern part of the District is healthy, but not the southern portion. The population is contained in 3,184 villages and two towns, DALTONGANJ, the head-quarters, and GARWĀ. The District is very sparsely inhabited, the number of persons per square mile being only 126. The density is greatest in the alluvial valleys along the course of the north Koel and Amānat rivers and on the right bank of the Son. Elsewhere, and especially in the south and west, the country is wild and inhospitable, and is inhabited mainly by forest tribes, who eke out their precarious crops of oilseeds, maize, and cotton with the blossoms of the *mahuā* tree and other products of the jungle. There is some emigration to Assam. Only 7,000 persons enumerated there in 1901 were entered as natives of Palāmau; but it is believed that, owing to the recent creation of the District, many of the Palāmau emigrants returned their birthplace as Lohārdagā, and were therefore assigned to the category of those born in Rānchī. All but about 6 per cent. of the

population speak Hindī, in most cases a patois of the Bhojpurī dialect known as Nāgpurī, which has borrowed some of its grammatical forms from Chhattīsgarhī; 3·5 per cent. speak Oraon, a language of the Dravidian family; and 2·7 per cent. speak dialects of the Mundā family, chiefly Mundārī, Birjia, and Korwā. Of the total, 86 per cent. are Hindus, 8·4 per cent. Muhammadans, and 4·2 Animists. Those returned as Hindu include large numbers of semi-Hinduized aborigines.

The largest tribes and castes are Bhuiyās (73,000), Kharwārs (42,000), and Ahīrs; among other Dravidian tribes distinctive of this neighbourhood may be mentioned the Bhogtās, Korwās, Nagesias, and Parhaiyās. The Cheros were at one time a dominant race in South Bihār; they are known in Palāmau District as 'the 12,000,' it being popularly asserted that at the beginning of their rule in Palāmau they numbered 12,000 families. Agriculture supports 72 per cent. of the population, industries 11·7 per cent., and the professions 0·8 per cent.

Christians number 7,908, of whom 7,897 are natives. Nearly all reside in the Mahuādānd *thāna*, where a Roman Catholic mission is at work and has built a church and a school.

Agriculture.

The *rabi* and *bhadoi* crops, especially the former, are very precarious, owing to the lightness and uncertainty of the rainfall, and the rapidity with which all water runs off to the main streams. The rice crop is even more precarious, except where means of storing up water to irrigate the fields have been provided. A few of the more enlightened *zamīndārs* have done a great deal to this end, by throwing embankments across the natural slope of the country and diverting small streams to fill these rude reservoirs; much has also been done by Government in the estates under its direct management. Rice lands have all to be laboriously constructed by terracing off favourable hollows or filling up the beds of streams with the earth from their banks. For agricultural purposes the District consists broadly of two interlacing zones. The first consists of the valleys of the Amānat, the Koel, and the Son, and contains stretches of fertile clay covered with rice, sugar-cane, and various *rabi* crops. The second comprises the hilly areas which are generally covered with a thin loose gravelly soil; and the population is chiefly dependent for its sustenance on the *bhadoi* crops. The most fertile soil is a black friable clay known as *kewāl*, found in abundance in the valleys and also, though without any great depth, in the uplands. It is very retentive of moisture and produces good crops of rice, wheat, and barley; in many cases *khesāri* (*Lathyrus sativus*) is grown on it after the rice has been harvested.

In 1903–4 the cultivated area was estimated at 577 square miles, current fallows at 588 square miles, and other cultivable waste at

1,072 square miles. Rice, which is the staple crop in the valleys, is grown on 238 square miles, the winter crop being the most important; maize covers 55 square miles; while other cereals, including *marua*, gram, barley, wheat, millets such as *kodon*, *sāwān*, and *gondli*, and pulses, chiefly *rahar* and *khesāri*, cover an area of 335 square miles. The chief miscellaneous crops are sugar-cane, oilseeds, cotton, and poppy.

Cultivation is extending fast, and it is estimated that in the Government estates the increase amounted to 9 per cent. in the seven years ending 1903. In private estates the further spread of cultivation depends on the degree to which the individual landlords attend to the wants of their ryots in the matter of irrigation. Spasmodic attempts have been made to improve the quality of crops by the selection of seed, but greater success has attended the introduction of new varieties; and sugar-cane, chillies, linseed, potatoes, and gram are being grown more extensively than they were a few years ago. No use was made of the Land Improvement and Agriculturists' Loans Acts till 1896, but in the six following years Rs. 1,40,000 was advanced, most of which has been repaid. In 1902-3 the operations were further extended, Government advancing Rs. 20,000 to *zamīndārs* under the former and Rs. 38,000 to tenants under the latter Act.

The cattle are poor; they are grazed in the jungles, and in the hot months large numbers are sent to the high lands in the south and south-west and to the Surgujā State, where pasture is abundant.

Irrigation is mainly confined to the construction of reservoirs or *bāndhs*, the more useful and valuable of which are filled by the waters of diverted streams. Great skill is often shown in planning and carrying out these schemes, and water is frequently carried by means of rude channels and raised embankments for a distance of 6 or 7 miles. These works are extraordinarily remunerative, and seldom yield a profit of less than 20 to 25 per cent. It is estimated that half the area under rice is irrigated in this manner; practically the only other crops irrigated are sugar-cane, poppy, chillies, and garden produce.

Forests.

The District contains 260 square miles of forest, of which 188 square miles are 'reserved' forest under the management of the Forest department, and the remainder are 'protected' forests under the control of the Deputy-Commissioner. The latter comprise the surplus area left in each Government village after allotting to the tenants for extending cultivation twice as much waste as there is cultivated land. The 'reserved' forests lie chiefly in the south of the District, the Barasand, the largest block, extending over 89 square miles to the south of the Koel river. The most valuable tree is the *sāl* (*Shorea robusta*), which grows best in the more fertile soil along the foot of the hills. It is here found in places almost pure

higher up mixed species become more abundant, and on the sides and tops of the hills, where the soil is poorer, *sāl* ceases to exist. Other valuable trees are satin-wood (*Chloroxylon Swietenia*), ebony (*Diospyros melanoxylon*), and black-wood (*Dalbergia latifolia*), which are found in the mixed forest above the *sāl*, but not in sufficiently large size to ensure a steady revenue. The majority of the forests are remote from the railway, and revenue is at present chiefly derived from bamboos, which are generally sold at Rs. 2 per 1,000. Other minor products of limited importance are *sabai* grass (*Ischaemum angustifolium*), lac, and the fruit of the *mahuā* tree; gum kino is being experimentally extracted from the *Pterocarpus Marsupium* for use in dyeing and tanning. The receipts from the 'reserved' forests in 1903-4 amounted to Rs. 5,000. There are extensive private forests, but these are as a rule less valuable than those belonging to Government, the landlords having only lately begun to preserve them. Plantations of *mahuā*, teak, mahogany, *kusum*, and *divi-divi* plants have been made, but have not as yet gone beyond the experimental stage.

Minerals.

The most important coal-field is that of Daltonganj, where the coal-bearing rocks in the valley of the North Koel river extend over an area of about 30 square miles, and the coal contains a good proportion of carbon. The Aurangā field has an area of 97 square miles and contains numerous coal-seams, some of large size, but the quality of the coal is indifferent. The Hutar field, which lies to the west of the Aurangā, has an area of about 79 square miles; the coal is somewhat inferior to that of Daltonganj. The Bāran-Daltonganj branch of the East Indian Railway now taps the Daltonganj field, and has brought the coal within reach of Cawnpore and other large manufacturing centres in the United Provinces. Mines were opened in 1902 at Rājhara and Singrā; the former mine was first worked in 1857, but it had been closed owing to difficulties of transport. The coal is worked by means of pits and inclined planes; the output in 1903 was 34,000 tons and on the average 1,200 hands were employed; the labourers are for the most part Cheros and other local men. An immense quantity of iron ore is found all over the District, especially in the neighbourhood of the coal-fields. It is of three kinds: magnetite occurring in the gneiss, siderite with brown and red hematite in the Gondwāna, and red and brown hematite in the laterite. The ores from the Gondwāna are the most valuable. At present they are worked only to a small extent by some of the jungle tribes, and the out-turn is barely enough to satisfy local requirements. Limestone, sandstone, laterite, and graphite also exist, but difficulties of transport have hitherto prevented their being utilized. Copper has been found, but not in sufficient quantities to be worked profitably.

Arts and manufactures exist only in the most primitive form; and artisans do no more than supply the local demand for cotton cloth, brass utensils, silver and lac ornaments of the rudest kind, blankets, *tat* cloths for pack-bullock bags, rude country guns which sell at R. 1 for each span length of the barrel, and steel and iron for the manufacture of ploughs and *tāngis*, a rude kind of axe. *Ghī* is made, *tasar* silkworms are reared, and lac is produced for export.

Trade and communications.

The chief exports are hides, lac, *ghī*, oilseeds, bamboos, catechu, and coal; and the chief imports are European piece-goods, salt, brass-ware, sugar, tobacco, kerosene oil, and rice; *ghī*, mustard, and hides are brought in from Surgujā. Except in the neighbourhood of the railway stations, where carts are used, the trade is carried by pack-bullocks. Most of the exports are sent in the first instance to Gayā or Dinapore. The chief trade centres are Garwā, Daltonganj, Hariharganj, Husaināba̅d, Pathrā, and Chandwā. Barter is a common form of trading and affords great opportunities for profit to the middleman.

The Daltonganj section of the East Indian Railway (opened in 1902) runs for 55 miles within the District. The District contains 322 miles of road (of which 26 are metalled), and 38 miles of village tracks. The principal lines are from Daltonganj to Gayā District via Hariharganj and Manātu, to Rānchī, to the extreme south of the District through the Government forests, and to Mirzāpur and Husaināba̅d via the important market of Garwā; a good road from Garwā in the direction of Surgujā is under construction. Quicksands in the Koel and its great breadth are extremely unfavourable to the development of the country west of that river.

Famine.

Pālamau was visited by famine in 1897 and again in 1900. On the former occasion the number of workers relieved was 488,668 (in terms of one day) and on the latter 219,740; the numbers gratuitously relieved were 453,941 and 81,774 respectively. In 1897, 15,000 maunds of Burma rice were imported under a Government bounty of 8 annas per maund, and the leading *zamīndārs* rendered loyal assistance in the relief of their tenantry. The total expenditure by Government was Rs. 1,19,000 in 1897 and Rs. 30,000 in 1900.

Administration.

The subdivisional system has not yet been introduced; and the administration of the whole District is carried on from Daltonganj, where the staff consists of the Deputy-Commissioner and two Deputy-Magistrate-Collectors.

The principal civil and criminal court is that of the Judicial Commissioner of Chotā Nāgpur, who is stationed at Rānchī. The local criminal courts are those of the Deputy-Commissioner and the two Deputy-Magistrates. The Deputy-Commissioner has special powers

under section 34 of the Criminal Procedure Code, and is also *ex-officio* Subordinate Judge of the District. A Munsif is stationed at Palāmau for the disposal of civil work. The crimes most characteristic of Palāmau are petty dacoities committed by the Korwās, a semi-savage tribe of the neighbouring Native State of Surgujā, and the poisoning of cattle for the sake of their hides.

In 1773 the Palāmau *pargana* was settled with Mahārājā Gopāl Rai for five years at a revenue of Rs. 5,000, rising to Rs. 12,000 in the third year. It was then settled for ten years at an annual revenue of Rs. 15,000. In 1812 the Mahārājā, Churāman Rai, was in arrears to the extent of Rs. 55,000, and the *pargana* was put up to public auction and bought in by Government for the amount due, thus becoming a Government estate. From that period to 1839, with the exception of the period during which Palāmau was given over to the Deo Rājās, the land revenue demand was *sicca* Rs. 25,000, of which Rs. 13,000 was payable by the *jāgīrdārs* under the Mahārajā and Rs. 12,000 was assessed on the *khālsa* villages under direct management. In 1839 the *khālsa* villages were settled with the farmer for twenty years at Rs. 12,000, and the rent payable by the *jāgīrdārs* was raised to Rs. 16,000. In 1859 the *khālsa* villages were summarily settled for three years for Rs. 22,000, and in 1863 a thirty years' settlement was concluded with the farmer for Rs. 36,000. This arrangement continued till 1896, when a new settlement for fifteen years was made direct with the ryots. At the same time the *jāgīrdārs* were recognized as holders of permanently settled estates, the sum they were then paying to Government as the representative of the Mahārājā of Palāmau being fixed as the revenue payable in perpetuity. The current demand of land revenue in 1903–4 was Rs. 1,07,000, of which Rs. 27,000 was payable by 255 permanently settled estates, Rs. 1,400 by 4 temporarily settled estates, and the remainder by the Government estates. The incidence of land revenue is only $4\frac{3}{4}$ annas per cultivated acre; the average rental is Rs. 2–14–4, but the amount varies with the nature of the land cultivated, the means for irrigating it, and its situation in the District. The best rice land lets for Rs. 10 to Rs. 15 an acre in parts of the Garwā and Patun *thānas*; Rs. 6 in the Government estates; and Rs. 4 to Rs. 6 in the south of the District. The best *bhadoi* and *rabi* lands fetch only Rs. 6 to Rs. 8 an acre, while in the Government estates the maximum rate is Rs. 3. In some parts as much as Rs. 10 per acre is charged for land growing sugar-cane. The average area in possession of a tenant may be roughly estimated at 5·6 acres.

The following table shows the collections of land revenue and total revenue since the formation of the District (principal heads only), in thousands of rupees:—

	1892-3.	1900-1.	1903-4.
Land revenue . .	63	1,02	89
Total revenue . .	2,75	3,11	3,48

Outside the municipality of DALTONGANJ, local affairs are managed by the District board. Its income in 1903-4 was Rs. 80,000, of which Rs. 37,000 was derived from rates; and the expenditure was Rs. 96,000, including Rs. 55,000 spent on public works.

The District contains 10 police stations and 11 outposts. The force subordinate to the District Superintendent in 1903 consisted of 2 inspectors, 19 sub-inspectors, 24 head constables, and 213 constables. There was also a rural police force of 147 *daffadārs* and 1,109 *chaukīdārs*, including 54 *ghātwāls* who are maintained to patrol the roads at the passes over the hills. A District jail at Daltonganj has accommodation for 124 prisoners.

Education is very backward, only 1·9 per cent. of the population (3·7 males and 0·1 females) being able to read and write in 1901; but since the constitution of the District in 1892 the number of pupils has increased from 4,317 to 8,328 in 1903-4, of whom 1,024 were girls. In the latter year 15·9 per cent. of boys and 2·1 per cent. of girls of school-going age were at school. Of the 332 educational institutions, 11 provided for secondary and 311 for primary education, and there was a training school. The most important institution is the high school at Daltonganj. The total expenditure on education in 1903-4 was Rs. 50,000, of which Rs. 15,000 was contributed from Provincial revenues, Rs. 19,000 from District funds, and Rs. 13,000 from fees.

The District contains 4 dispensaries, of which that at Daltonganj has accommodation for 20 in-patients. Altogether, the cases of 12,495 out-patients and 341 in-patients were treated at these institutions in 1903, and 534 operations were performed. The expenditure was Rs. 5,000, of which Rs. 1,700 was met from Government, Rs. 2,500 from local funds, Rs. 400 from municipal funds, and Rs. 1,100 from subscriptions.

Vaccination is not compulsory except in Daltonganj. In 1903-4 the number of persons successfully vaccinated was only 18,000, or 29·3 per 1,000 of the population. The mortality from small-pox is higher than in most Bengal Districts.

[Sir W. W. Hunter, *Statistical Account of Bengal*, vol. xvi (1877); L. R. Forbes, *Settlement Report of Palamau* (Calcutta, 1875); B. C. Basu, *Report on the Agriculture of the District of Lohardaga* (Calcutta, 1890); D. Sunder, *Settlement Report of the Palamau District* (Calcutta, 1898).]

Pālamcottah (*Pālaiyamkottai*, 'barony-fort'). — Head-quarters of Tinnevelly District, Madras, situated in 8° 44′ N. and 77° 45′ E., in the Tinnevelly *tāluk*, on an open plain a mile from the Tāmbraparni river and 2½ miles from Tinnevelly town. Pālamcottah was fortified under the native rulers, and its defences were intact at the time when it passed into the hands of the British. It subsequently formed the base of their operations during the Poligār Wars. The fort was not dismantled until comparatively recently, when the garrison of one or more native regiments which had been stationed here ever since the British occupation was finally withdrawn. The population of the town in 1901 was 39,545: namely, 23,548 Hindus, 13,052 (or a third of the total) Musalmāns, and the rest (2,945) Christians. The high proportion of Musalmāns is accounted for by the inclusion within municipal limits of the suburb of Melapālaiyan on the bank of the river, which is inhabited almost wholly by Labbais, engaged in trade, agriculture, and carpet-making. Pālamcottah was constituted a municipality in 1866. The income and expenditure during the ten years ending 1902–3 averaged Rs. 31,000 and Rs. 30,800 respectively. In 1903–4 they were Rs. 48,400 and Rs. 47,000. Most of the income is derived from taxes on land and houses and from tolls. The town stands in an excellent situation and possesses a dry and healthy climate, but has no supply of water which can be depended upon throughout the year. Proposals are being made to remedy this defect, but no definite scheme has yet been formulated. Being the head-quarters of the District, Pālamcottah contains all the usual offices. It is also the chief centre of the Christian missions in Southern India, and possesses a large number of educational and other philanthropic institutions established by the various mission agencies. Of these, the Sarah Tucker College for girls and the school for the deaf and dumb deserve special mention. There are also two high schools for boys, besides other secondary schools. It is the residence of the Bishop of Tinnevelly.

Pālampur Tahsīl.—*Tahsīl* of Kāngra District, Punjab, lying between 31° 49′ and 32° 29′ N. and 76° 23′ and 77° 2′ E., with an area of 443 square miles. The *tahsīl* lies wholly in the hills, extending from the Dhaola Dhār on the north to the Beās on the south. It is traversed by a number of tributaries of the Beās. The population in 1901 was 132,955, compared with 129,599 in 1891. It contains 113 villages, of which Pālampur is the head-quarters. The land revenue and cesses in 1903–4 amounted to 2 lakhs.

Pālanpur Agency.—A group of States in Gujarāt, lying between 23° 25′ and 24° 41′ N. and 71° 16′ and 72° 46′ E., in the extreme north of the Bombay Presidency proper, with an area of 6,393 square miles. It is bounded on the north by the Udaipur and Sirohi States

of Rājputāna; on the east by the Mahī Kāntha Agency; on the south by the State of Baroda and Kāthiāwār; and on the west by the Rann of Cutch. The head-quarters of the Agency are at PĀLANPUR TOWN.

GENERAL STATISTICS FOR EACH STATE IN THE AGENCY

State.	Caste, tribe, or race of the ruling chief.	Area in square miles (approximate).*	Number of villages.	Population, 1901.	Revenue (1903-4). From land.	Revenue (1903-4). Total.	Tribute. Amount.	Tribute. To whom payable.
					Rs.	Rs.	Rs.	
1st Class States.								
Pālanpur	Muhammadan, Pathān.	1,766	511	222,627	2,10,094	7,29,199	38,461	Gaikwār.
Rādhanpur	"	1,150	160	61,548	2,70,668	5,28,658	—	—
4th Class State.								
Tharād	Vāghela Rājput.	940	157	49,264	19,879	51,257	—	—
5th Class State.								
Vāv	Chauhān Rājput.	380	25	8,286	2,440	11,647	566†	Mārwār Rāj.
Jurisdictional Tālukas not classified.								
Malek Jorāwar Khān	Muhammadan	Included in *Thāna* Circles.	10	Included in *Thāna* Circles.	‡	20,000	—	—
Thākurs of Thara	Vāghela Rājputs.		14		21,763	31,138	2,151	Gaikwār.
Vāghela Khānjī of Diodar.	"		12		3,514	5,293	—	—
Vāghela Chamansingh of Diodar.	"		13		5,419	7,552	—	—
Ravajī Lakhājī of Sāntalpur.	Thākur		1		2,000	2,000	—	—
Thāna Circles.								
Kānkrej	Kolī Thākurdas.	810	92	38,829	33,972	34,472	5,590	Gaikwār.
Diodār, including Tervāda and Bhābbar.	Rājputs, and Muhammadans in Tervāda.	364	114	31,107	40,000	42,485	—	—
Vārāhi	Muhammadan	300	51	13,151	15,000	40,000	—	—
Vāv, including Suigām	Rājputs	377	53	19,330	17,855	18,107	—	—
Sāntalpur, including Chādchat.	"	303	39	12,082	15,175	15,175	—	—
Deesa Cantonment	. . .	3	1	11,047	‡	‡	—	—
Total	. . .	6,393	1,253	467,271	6,57,779	15,36,983	46,768	

* Some of the figures of area given in this column differ from those given in the *Census Report* of being based upon more recent and more correct information.
† Tribute varies. ‡ Not available.

For the most part the country is a sandy, treeless plain, with, in some places, waving sandhills, and between them valleys of black clay. To the north and north-east, bordering on Sirohi, lies an extremely wild and picturesque tract, covered with rocks and forest-clad hill ranges, outliers from the Abu and Jāsor hills. Some of these hills are of considerable height; chief among them is Jāsor, about 3,500 feet above the sea, a hill of gneiss with outbursts of granite, situated about 18 miles north of Pālanpur town. Jāsor hill is well suited for a sanitarium, except that its water-supply is scanty.

Physical aspects.

The chief rivers are the Banās and Saraswatī. The Banās, rising in Dhebar Lake, among the hills of Udaipur, flows west past the town and cantonment of Deesa, and falls into the Rann of Cutch by two mouths. Except when in flood, the Banās may almost everywhere be forded. Its chief tributaries are the Sipu and Bālārām. It is not utilized for irrigation, though by building dams much of the water might be stored. The Saraswatī, a small but sacred stream, rising in the Mahī Kāntha hills, crosses the eastern corner of the Agency. Close to the hills the water is near the surface, but gradually sinks into the sandy western plains. Towards the Rann, water is especially scarce and brackish, and in this tract a year of scanty rainfall causes great hardship.

The rocks are metamorphic gneiss and mica schist, with upheavals and outbursts of red and grey granite. The fauna do not differ materially from those found in the adjacent British Districts.

From March to June the heat is great, the thermometer in the shade rising to 113° in May; the hot winds are so fierce that they keep even the people of the country from travelling during the daytime. From September to November the country is unhealthy, both Europeans and natives suffering from fevers of a bad type. The cold in January, when the temperature falls to 50°, is at times very great, but it does not last long. The rains begin in July and are heaviest in August and September. The annual rainfall averages 30 inches at Pālanpur, 26 at Tharād, and 16 at Rādhanpur. Except in the hills, the Pālanpur States are liable to drought.

On December 15, 1882, an earthquake occurred, with minor shocks and rumbling noises at intervals of a few days, ceasing in April, 1883. The damage done to buildings was estimated at 1½ lakhs. In 1896–7 the plague broke out at Pālanpur, and since then the most seriously affected localities have been Pālanpur and Deesa cantonment. During the famine of 1899–1900 many cattle died in the Agency. The condition of the people has also been much reduced by the years of scarcity which followed that famine.

History.

The territory included in the Agency of Pālanpur has, like the more central parts of Gujarāt, passed during historical times under the sway of the different Rājput dynasties of Anhilvāda (746–1298), the early Khiljī and Tughlak Shāhi dynasties of Delhi (1297–1403), the Ahmadābād Sultāns (1403–1573), the Mughal emperors (1573–1757), the Marāthās (1757–1819), and lastly the British. British connexion with Pālanpur dates from 1809, with Rādhanpur from 1813, and with the remaining States, except Kānkrej, from 1819. When much harassed with freebooting raids from Sind, the chiefs prayed the British Government to help them, offering to pay a share of the charges incurred in restoring order. The

connexion of Kānkrej with the British Government dates from 1819–20, when the Mahī Kāntha Agency was formed. It continued part of Mahī Kāntha till, in 1844, on account of its nearness to Pālanpur, it was transferred to the Pālanpur Agency.

The State of Pālanpur, from which the Agency takes its name, is said to have been called Prahlādan Pātan, after a Ponwār conqueror, Prahlādan Deo, and to have been repeopled in the fourteenth century by Pālansi Chauhān. Pālanpur and Deesa were conquered about 1600 by Afghāns of the Lohāni stock known as Jhāloris. This family, though it lost Jhālor in 1699, has held Pālanpur almost continuously until the present day. The State of Rādhanpur, once the property of the Vāghelas, and named after a Baloch, Rādhan Khān, was entrusted to the Bābi governor Jāfar Khān in 1693, and has remained with the Bābis since that date. Tharād, originally ruled by Chauhān Rājputs, was conquered by the Musalmāns at the end of the twelfth or early part of the thirteenth century, when the ruling family was relegated to Vāv, which it still holds. Passing in succession to the Jhāloris and the Bābis of Rādhanpur, it was handed back in 1759 to the Vāghela Kānjī, chief of Morvāda, in whose family it still remains.

In 1821 the British Government agreed that in the case of Tharād no tribute should be exacted until the revenue had increased one-half, when one-third of the increase was to be paid. This arrangement remained in force until 1825, when all these States were freed from tribute. In 1826 further agreements, partly in supersession of the former ones, were signed and delivered to the British Government, wherein the chiefs promised to allow no Kolīs, Rājputs, or armed men of other districts to live in their territories without informing the British Government; to give up to the British and Baroda Governments any robbers and peace-breakers who had sought shelter in their domains; to help with all their forces in suppressing the Khosas and other freebooters, and to commit no irregularities in the neighbouring districts. The chiefs have also subscribed to the opium engagement of 1822. At first the relations of the British Government with these States were purely political; but as the Superintendent held the position of universal arbiter, it soon (1820) became necessary to place subordinate officers called agents, *kārkuns*, in the small States, with a view of collecting information and keeping order. The *kārkuns* have since developed into *thānadārs* or commandants of posts, officers invested with certain fixed civil and criminal powers. At the beginning of British management these districts were the haunt of daring freebooters, some of them people of the country, others Khosas from Sind. Though the States are still backward and tillage spreads slowly, disorder has been stopped and considerable progress made.

The population at the last four enumerations was: (1872) 508,526,

(1881) 576,478, (1891) 645,526, and (1901) 467,271. The decrease in the last decade is due to the severity of the famine of 1899–1902. The average density is 73 persons per square mile; the number of towns 3, and of villages 1,188[1]. The towns are PĀLANPUR, RĀDHANPUR, and DEESA. Distributed according to religion, Hindus form 85 per cent. of the total, Musalmāns 10 per cent., and Jains 5 per cent. Brāhmans (22,000) are numerous, following the literary professions and occasionally holding land. The majority of the population consist of Kuṅbīs (66,000), Rājputs (22,000), and Kolīs (99,000), who are landowners and cultivators throughout the Agency. There is a large shepherd caste, the Rabāris (30,000), who are nomadic. Among the artisans, Chamārs, numbering 28,000, stand first. The principal languages are Gujarātī and Western Hindī.

Population.

The soil of the Agency is of three kinds: the black, suited for cotton, rice, millets, wheat, and (if there be water) sugar-cane; a light soil, suited for the different kinds of pulse; and sandy, growing pulses and the palmyra palm. The country has been partly surveyed, but the exact cultivated area is unknown; it may be roughly stated that about three-fifths of the whole is cultivated, the remaining two-fifths about equally divided between cultivable and uncultivable land. Except on irrigated tenures, manure is not generally used. Holdings vary from 8 to 50 acres and upwards. Most of the land is in the hands of holders of service lands. Skilled husbandmen are comparatively few in number, and the majority of them are hampered with debt, and are more or less in the hands of the village money-lenders. The soil produces the usual Gujarāt cereals and pulses, cotton in the rich black soil of the Sami *tāluka* of Rādhanpur and the Vārāhi and Sāntalpur *tālukas*, *san*-hemp, and *mūng*. Sugar-cane and a small quantity of tobacco are also grown in Pālanpur.

Agriculture.

The bullocks of Kānkrej have been highly esteemed since the time of Akbar. They are the finest animals of their kind in Gujarāt. Buffaloes, cows, sheep and goats, camels, horses, and asses are also bred in both Pālanpur and Rādhanpur. Stallions are maintained, which covered 82 mares in 1903–4.

The large forests in the north and north-east of the Agency might, if well managed, yield a considerable revenue. The chief trees are the *khair* (*Acacia Catechu*), *sālar* (*Boswellia thurifera*), *bel* (*Aegle Marmelos*), *bor* (*Zizyphus Jujuba*), *jinjhara* (*Bauhinia racemosa*), and *karanj* (*Pongamia glabra*). The Bhīls and Kolīs gather beeswax, gum, and honey, and sell them to Vānīs or Memons. A considerable number of cattle are pastured in these forests, and still more in the valley of the Banās.

[1] This is the figure at the last Census, which took no account of unpopulated villages.

The bamboo thickets are in places very fine, especially on the top of the Jāsor hill.

Trade and communications.

Several minor industries exist, such as the extraction of oil from *rosha* grass, and the preparation of bobbins from *khimi* wood. Saltpetre is also prepared locally. A cotton-ginning factory is working at Sami; and at Singam, a village near the Rann, good leather-work is prepared.

The chief exports are: saltpetre, grain, rapeseed, castor, sesamum, cotton, *attar* of *chāmpa* (*Michelia Champaca*) and of *keora* (*Pandanus odoratissimus*), cattle, and *ghī*; imports: tobacco, fruit, spices, molasses, sugar-candy, sugar, cotton and silk cloth. The value of the whole trade, which is about equally divided between exports and imports, is estimated at from 40 to 45 lakhs in ordinary years. The exports go chiefly to Mārwār, Cutch, Kāthiāwār, Gujarāt, and Bombay. The imports come from Central and Upper India, Bombay, Kaira, Mārwār, Ahmadābād, and Pāli. Trade is carried on at permanent markets, the leading centres being Pālanpur, Rādhanpur, Deesa, Sami, and Munjpur. Except 2 miles of metalled roads and 4 miles unmetalled recently constructed in the town of Pālanpur, only cross-country tracks exist. Avenues of trees are maintained on $3\frac{1}{4}$ miles, and for 17 miles on the Pālanpur-Deesa road, which is in a state of disrepair. The Bombay, Baroda, and Central India Railway crosses the north-east corner for about 48 miles, with a branch 17 miles long from Pālanpur to Deesa; but the principal line is the Rājputāna-Mālwā Railway from Ahmadābād to Delhi.

There are in all sixteen British post offices in the Agency. Rural messengers are also employed to carry letters to and from the different States.

Famine.

The years held in remembrance as times of scarcity and famine are 1747, 1756, 1785, 1791, 1804, 1813, 1825, 1834, 1839, 1842, 1849, and 1899–1902. Of these, the severest were the famines of 1813 and of 1899–1902. To such straits were the people brought in 1813 that some are said to have lived on human flesh; and in such numbers did they die that the survivors could not carry away the dead. Villages were left desolate, and parts of the country, formerly cultivated, have ever since lain waste. The price of grain rose to 3 seers per rupee. The whole Agency suffered severely from famine in 1899–1902. Relief measures were commenced in September, 1899, and were closed in October, 1902. The highest daily average number of persons in receipt of relief was 92,348 in July, 1900. Cattle died in great numbers. More than 20 lakhs was spent on famine relief during the year 1899–1900, involving the States in debts amounting to 18 lakhs: namely, Pālanpur 9 lakhs, Rādhanpur 3 lakhs, and other States 6 lakhs.

Administration.

The chiefs of Pālanpur and Rādhanpur States are invested with full criminal and civil powers, and in matters of revenue are almost independent; but the sanction of the Political Agent is required for the trial of British subjects for capital offences. Over them the Political Agent exercises only a general supervision; but in the remaining eight petty States *kārkuns*, now called *thānadārs*, five in number, are invested with power to try second-class criminal cases and to decide civil suits up to Rs. 500 in value. There are also one European and two native Political Assistants who have higher powers; and above them is the Political Agent, who is the highest executive and judicial authority. But in important criminal cases appeals lie to the Commissioner of the Northern Division, and in murder cases and important civil matters to the Bombay Government. In Pālanpur and Rādhanpur towns there are local courts, from whose decision a final appeal lies to the chiefs in person, who follow codes of their own, based on British Indian laws. The chiefs of Tharād and Vāv have power in criminal cases to award three and two years' imprisonment, and to fine up to Rs. 5,000 and 2,000 respectively. In civil suits they exercise jurisdiction up to a value of Rs. 10,000 without appeal. The commonest forms of crime are theft, cattle-stealing, and hurt.

The gross revenue of the Agency is 15 lakhs, drawn from four chief sources: land (7 lakhs), customs ($3\frac{1}{2}$), excise ($1\frac{1}{2}$), and miscellaneous cesses including judicial receipts (3). The expenditure is 14 lakhs, chiefly devoted to administrative and domestic purposes. The Pālanpur State, the Thākur of Thāra, and the *tālukas* under Kānkrej *thāna* pay a tribute of Rs. 46,202 to the Gaikwār. Transit duties were abolished throughout the Agency in 1887.

Except in the unusual case of persons holding land hereditarily (*karam jodia*), who have an occupancy right or *batta*, land is almost everywhere in the hands of tenants-at-will, most of whom, in the State villages, hold direct from the chief, and in cadet (*bhāyād*) or proprietary (*mulgirāsia*) villages from the cadet or proprietor. The cultivator has no power to dispose of his holding by sale or otherwise. Rent-free service lands (*pasaita*) and lands granted in charity are sometimes sublet to peasants who pay rent to the original holders. On such lands the State does not receive the ordinary assessment, but under the name of *salāmi* the original holder makes the State a yearly payment, fixed at from 25 to 30 per cent. of the gross produce. In some villages the assessment on tobacco, pepper, and the early crops is paid in money at rates fixed on the number of ploughs, while in others the revenue is collected under the crop share (*bhāgbatai*) system. The share due to the State is fixed on a rough estimate by a State official and the village *pātel*. In Pālanpur and Rādhanpur States the

rents are collected by village accountants under the control of revenue *tahsīldārs*, who are again subordinate to the chief's revenue minister. In other parts of the Agency, except Tharād and Vāv, where the chief's share of the revenue is collected by officials appointed for the purpose, the proprietors themselves realize the revenue with the help of village officials. Survey operations are now in progress.

Of the several works constructed since 1875 in the Agency, the chief are the Goodfellow Hospital, the High School, and the Jackson Hall at Pālanpur, the Scott Canal and Harris Clock-tower at Rādhanpur, and several roads. There are four municipalities—at PĀLANPUR, DEESA, Tekra, and Rājpur—the latter two places being suburbs of Deesa cantonment; and all of them are administered as departments of the State. Their income is derived from octroi duty.

There is a large British cantonment at Deesa, the income of which in 1903–4 was Rs. 35,000 and the expenditure Rs. 32,000. At present one native infantry regiment is stationed there. The chiefs of the Agency maintained in 1903–4 a military force of 861 men, consisting of 206 mounted and 655 foot-soldiers, and a permanent foot and mounted police force of 4,794, of whom 2,935 were in Pālanpur and 752 in Rādhanpur. The Agency contains one Agency jail, five State jails, and six *thāna* lock-ups, which had in 1903–4 a daily average of 288 prisoners.

The States decided in June, 1882, to defray all educational expenses, receiving in return all school fees, and agreed that the expenditure should be regulated by the proposals of the Bombay educational department. In the Pālanpur Agency 20,206 persons were returned as literate in 1901, 8 per cent. of the male population being able to read and write. The Agency contained in 1903–4 a high school, 2 middle schools, 70 primary schools, and 17 private schools, or a total of 90, compared with 30 and 110 in 1881 and 1891 respectively. The total number of pupils was 3,298, of whom 222 were girls. The cost of education was Rs. 27,000.

About 40,000 persons received medical relief at 4 hospitals and 13 dispensaries in 1903–4. The cost of maintenance amounted to Rs. 28,880. About 12,000 persons were vaccinated in the same year.

Pālanpur State.—State in the Pālanpur Agency, Bombay, lying between 23° 57′ and 24° 41′ N. and 71° 51′ and 72° 45′ E., with an area of 1,766 square miles. It is bounded on the north by the Rājputāna States of Jodhpur and Sirohi; on the east by Sirohi and Dānta States, the Arāvalli range forming the boundary; on the south by Baroda; and on the west by other States under the Pālanpur Agency. The length from east to west is 60 miles, and from north to south 45 miles.

The southern and eastern portions are undulating and tolerably well

wooded. Towards the north the country becomes mountainous, with much forest; the villages are far apart, and generally poor and small; the hills afford excellent pasture; and the forests contain many useful timber trees. The State is watered by the Banās river, which runs through its entire length, and by the Saraswatī, which crosses a portion of its eastern tracts. The climate is dry and hot, and fever is prevalent. The rainfall in 1903 was 25 inches. The temperature ranges from 51° to 91° in January and from 80° to 113° in May.

The chief, or, as he is entitled, the Dīwān, of Pālanpur is descended from the Lohānis, an Afghān tribe who were subsequently known in history as Jhāloris, and who captured Jhālor from the Chitor Rājputs in the fourteenth century. On their first arrival they were vassals of Ahmadābād; and during the disturbances which marked the fall of that monarchy, Ghazni Khān Jhālor endeavoured to rouse Northern Gujarāt to arms on behalf of Muzaffar Shāh, the last Ahmadābād Sultān. For this action he was imprisoned by Akbar, but was subsequently (1589–90) reinstated at Jhālor, and seven years later received the title of Dīwān and the government of Lahore for successfully repulsing an invasion of the Afghān tribes. During his rule his brother Malik Fīroz Khān took Pālanpur and Deesa, making the former his head-quarters. Ghazni Khān was succeeded in 1614 by his son Pāhār Khān, who yielded place in 1616 to Malik Fīroz Khān, the conqueror of Pālanpur. Subsequently (1699) Jhālor and Sāchor, the possession of which had been confirmed by Aurangzeb in 1682, were taken from the family, which thenceforth fixed its seat at Pālanpur. The connexion of the British Government with the State dates from 1809, in which year the chief was murdered by a body of factious nobles, and his infant son was placed on the throne by the British under the regency of an uncle. Constant dissensions, however, occurred between uncle and nephew until 1817, when the former broke into open revolt, peace being eventually restored by a British force which stormed the town of Pālanpur and replaced the young chief on the throne. The task of administration was then entrusted to a Political Superintendent, and a local force of 250 men was raised to prevent further breaches of the peace. This arrangement was enforced until 1874, when the control of the Political officer, particularly over the State's expenditure, was relaxed. The levy was maintained until 1891.

The chief is entitled to a salute of 11 guns, and has power to try any persons for all offences, except British subjects, whose cases require the sanction of the Political Agent. The family hold a patent or *sanad* guaranteeing any legitimate succession according to Muhammadan law, and follow the rule of primogeniture in point of succession.

The population of the State was 215,972 in 1872, 234,402 in 1881,

274,864 in 1891, and 222,627 in 1901. It contains one town, PĀLANPUR, and 510 villages. The density of population is 70 persons per square mile. Hindus number 183,495, Muhammadans 26,452, and Jains 12,602.

To the north and west the soil is light and sandy, needing little water but usually yielding only one crop a year. To the south and east, towards the hills, the soil is a rich black capable of giving three crops a year with a good rainfall. For the first crops slight rain is sufficient, but in the case of the late harvest heavy rain is required, when the yield is very abundant. The principal products are wheat, rice and other grains, and sugar-cane. Four stallions are maintained at Pālanpur for horse-breeding purposes.

The high roads from Ahmadābād to Pāli in Mārwār, and from Ahmadābād to Nasīrābād, Ajmer, Delhi, Agra, and Deesa, pass through the State. A considerable trade in cotton, cloth, grain, raw sugar, and rice is carried on with Pāli, Dholera, Ahmadābād, and Rādhanpur.

The chief enjoys a gross revenue of 7·3 lakhs, and pays a tribute of Rs. 38,461–8–7 to the Gaikwār of Baroda. Land revenue in 1903–4 amounted to 2·1 lakhs, and excise revenue to Rs. 55,000. No transit duties are levied. The chief maintains, at an annual cost of about 1¼ lakhs, a force of 161 horse and 440 foot. The police force of the State consisted in 1903–4 of 2,935 men, regular and irregular.

The State maintains 22 schools attended by 1,244 pupils, besides 31 girls. About 12,200 persons received relief at hospitals and dispensaries in 1903–4. The number of persons vaccinated in the same year was 11,800.

Pālanpur Town.—Capital of the State of the same name in Bombay, situated in 24° 10′ N. and 72° 28′ E., at the junction of the Pālanpur-Deesa branch of the Bombay, Baroda, and Central India Railway with the main line. Population (1901), 17,799. It is the head-quarters of the Pālanpur Political Agency, and the residence of the Dīwān or chief of Pālanpur State. The town, lying low, is hidden and commanded by a circle of hillocks. It is surrounded by a brick-and-mortar wall, built in 1750 by Dīwān Bahādur Khānjī, from 17 to 20 feet high, 6 feet thick, and 3 miles in circuit. The two suburbs of Jainpura and Tājpura are surrounded by a ditch, once 12 feet deep and 22 feet broad. The houses are irregular and closely packed, and, with few exceptions, the streets and lanes are narrow and dirty. The supply of water, chiefly from wells, is unwholesome. The public health is not good, lung diseases and fevers being very prevalent.

Pālanpur is a very old settlement. It is mentioned in the eighth century as the place where Vanarājā (746–80), the founder of the Chāvada dynasty of Anhilvāda, was brought up. Early in the thirteenth century it appears as Prahlādan Pātan, the capital of Prahlādan Deo of

the Ponwār house of Chandrāvati. Afterwards falling waste, it was in the fourteenth century repeopled by Pālansi Chauhān, from whom it takes its present name. Pālanpur contains a hospital, a school, and a library.

Pālār (or *Kshīra-nadī*, the 'milk river').—A river of Southern India, which has its reputed source on Nandidroog, in the Kolār District of Mysore. From near Kaivāra it turns south-east and leaves Mysore in the east of the Bowringpet *tāluk* (Kolār). Entering the North Arcot District of Madras it bends to the north-east after descending the Ghāts, and flows into the Bay of Bengal near Sadras (Chingleput District). Its length in Mysore is about 47 miles, the entire drainage of the catchment basin, 1,036 square miles, being utilized for cultivation. Of the tanks on it, the largest are Betamangala and Rāmasāgara in the Bowringpet *tāluk*, the former being the source of water-supply for the Kolār Gold Fields. In Madras the length of the river is about 183 miles. There is some reason to believe that it once flowed to the sea from the valley through which now runs the Korttalaiyār, a stream which reaches the Bay of Bengal to the north of Madras City.

The chief tributaries of the Pālār are the Ponne, which joins it on the left bank in North Arcot, and the Cheyyār, which joins it on the other bank in Chingleput District. On its banks are the towns of Vāniyambādi, Vellore, Arcot, and Chingleput. The first of these was greatly damaged by a sudden flood which swept down the river in 1903, causing the loss of hundreds of lives. Near Arcot the river is crossed by a dam built in 1857, and designed to give an improved supply to the old native channels which fed a large series of reservoirs in those parts. It was breached in 1874, but was subsequently restored, and is now 2,634 feet in length. The dam and the improved channels cost 21 lakhs and add to the supply of about 270 existing reservoirs, some of which are in Chingleput District; but they do not water any great extent of fresh land, and if the receipts from the irrigation which existed before they were constructed be deducted they are worked at a great loss. In Chingleput District about 50,000 acres are watered from the river, which feeds a series of tanks.

The Pālār is crossed by railway bridges at Mailpati (North Arcot District), and between Padalam and Kolatūr in Chingleput.

Palāsbāri.—Village in the Gauhāti subdivision of Kāmrūp District, Eastern Bengal and Assam, situated in 26° 8′ N. and 91° 32′ E., on the south bank of the Brahmaputra, 15 miles west of Gauhāti town. The Mārwāri merchants of the place purchase lac and a little cotton from the hill tribes, and mustard seed, rice, silk, and a little jute from the villagers of the neighbourhood. There is a flourishing market, in which all sorts of country produce, especially poultry and vegetables,

are procurable. The public buildings include a dispensary and an English middle school. The river steamers call regularly at Palāsbāri *ghāt*.

Palāsni.—Petty State in REWĀ KĀNTHA, Bombay.

Palāsvihir.—Petty State in the DĀNGS, Bombay.

Palaungs.—A Mon-Anam hill people, found mostly in the uplands to the north of the Northern Shan States, and in the east of the Ruby Mines District of Upper Burma. The Northern Shan State of Tawngpeng may be looked upon as the centre of the Palaung country. The majority of the inhabitants of the State are Palaungs, the Sawbwa is a Palaung, and most of the scattered Palaung tribes found outside the State claim to have come originally from within its limits. Among the Shans the name for the Palaungs is Kunloi ('highlanders'); their name for themselves is Ta'ang. The main division of the people is into Palaungs proper and Pales. The Palaungs proper are confined to the country immediately surrounding Namhsan, the capital of Tawngpeng; all clans outside this limited area are, properly speaking, Pales. No distinction was made between Palaungs proper and Pales at the Census of 1901. The total of Palaungs enumerated was 56,866, of whom about half were inhabitants of the Northern Shan States. In addition, about 7,500 were found in the 'estimated' areas of North Hsenwi. The Palaungs are Buddhists, and very zealous in their support of the priesthood. As a people they are peaceable and retiring, and neither mix nor intermarry freely with their Shan neighbours. The men have adopted the Shan dress; the women wear ordinarily a jacket, skirt, hood, and cloth leggings. The full dress, especially in the case of the Katurr and other pure Palaung clans, is elaborate and very brightly coloured, velvet figuring largely in its composition. The distinctive feature of the Pale women's attire is the skirt, striped horizontally in red and blue, the width of the stripes varying, with the clan, from an inch to a foot or more. The Pale woman's hood is ordinarily white, and smaller than the full-dress hood of the Palaung. In some of the Pale clans living farthest from Tawngpeng no hood is worn by the women; occasionally the head-dress is a bag, not unlike a stocking cap, into which the head is inserted. Coiffure varies; in full dress girls occasionally wear their hair over their shoulders; the Kwanhai women part their hair in the middle; in almost every clan a considerable proportion of the elderly females are close-cropped. The Palaungs build their villages almost invariably at a considerable elevation above the ground. Their houses are sometimes of a very large size and accommodate several families. They practise *taungya* (shifting cultivation), but are best known for their culture of tea, for which the hills of Tawngpeng and the surrounding country are admirably adapted. The greater part of the indigenous

tea industry east of the Irrawaddy is in their hands. The Palaung language belongs to the Mon-Anam sub-family; it is isolating, atonic, and full of gutturals, and is closely allied to the vernaculars of the Was of trans-Salween territory, the Riangs of the Southern Shan States, and the Hkamuks of Siam. There are various dialects, but no great divergence of speech.

[C. C. Lowis, *A Note on the Palaungs* (Rangoon, 1906).]

Palāveram.—Town in Chingleput District, Madras. *See* PALLĀVARAM.

Palaw.—Northernmost township of Mergui District, Lower Burma, bordering on Tavoy District. It lies on the mainland between 12° 20′ and 13° 28′ N. and 98° 33′ and 99° E., and includes the inhabited islands of Mali (known generally as Tavoy Island) and Cabosa, as far out as 97° 53′ E. Its total area is 785 square miles, hilly throughout, and forest-clad. The population was 19,447 in 1891, and 22,442 in 1901, about a third speaking Karen and the rest a dialect of Burmese differing from that in use at Mergui, and unintelligible to an ordinary Burman. There are 115 villages and hamlets. The head-quarters are at Palaw, a village of about 2,000 inhabitants (1901), and a port of call for a fortnightly coasting steamer from Moulmein, exporting rice, fish-paste, salt, and jaggery. The area cultivated in 1903–4 was 37 square miles, mostly under rice, yielding Rs. 39,100 land revenue.

Pāldeo.—One of the CHAUBE JĀGĪRS in Central India, under the Political Agent in Baghelkhand, with an area of about 28 square miles. Pāldeo was granted to Daryau Singh, the head of the Kālinjar Chaube family, in 1812. The present holder is Chaube Jagat Rai, who received the title of Rao Bahādur as a personal distinction in 1903. Population (1901), 8,598. The *jāgīr* comprises 18 villages, and has a revenue of Rs. 26,000, part of which is derived from the sale of diamonds, obtained at two villages in the estate. The chief place is Naigaon or Naugaon, situated in 25° 11′ N. and 80° 49′ E., 24 miles south of Kālinjar. Population (1901), 826.

Pale.—South-western township of the Lower Chindwin District, Upper Burma, lying between 21° 48′ and 22° 10′ N. and 94° 25′ and 94° 55′ E., with an area of 458 square miles. The population was 25,608 in 1891, and 31,241 in 1901, distributed in 252 villages. The head-quarters are at Pale (population, 1,113), close to the eastern border. The country is level in the east, becoming hilly as the Pondaung range is approached, and is well watered. The area cultivated in 1903–4 was 55 square miles, and the land revenue and *thathameda* amounted to Rs. 76,300.

Pālej.—Petty State in MAHĪ KĀNTHA, Bombay.

Paletwa.—Head-quarters of the Northern Arakan District, Lower

Burma, situated in 21° 18′ N. and 92° 51′ E., on the west bank of the Kaladan river. Paletwa is an insignificant village with a population (1901) of 481, perched on a high bank well above the stream, in a narrow gorge. The civil station consists of an office for the Deputy-Commissioner, a police station, a hospital, lines for the military police, and a few residences for the officers stationed at head-quarters. It is traversed by metalled pathways connecting the various eminences on the hill-side on which the houses and offices are built. There is a small wharf on the river bank below the village, alongside of which the Arakan Flotilla Company's steam-launches moor. On the bank are several fine groves of teak, the remains of an early plantation.

Pālghāt Subdivision.—Subdivision of Malabar District, Madras, consisting of the PĀLGHĀT and PONNĀNI *tāluks*.

Pālghāt Tāluk.—Southernmost *tāluk* of Malabar District, Madras, lying between 10° 25′ and 10° 57′ N. and 76° 25′ and 76° 51′ E., with an area of 643 square miles. It contains 113 *amsams*, or parishes. The population increased from 372,133 in 1891 to 390,098 in 1901. The land revenue demand in 1903–4 amounted to Rs. 4,94,000. The only place of importance besides PĀLGHĀT (population, 44,177), the head-quarters, is the village of KOLLANGOD. The *tāluk* lies in the remarkable break in the Western Ghāts which is known as the Pālghāt Gap; on the north it is bounded by spurs which run up to the Nīlgiri plateau, while on the south it is faced by the great Anaimalai Hills. The forests which lie at the foot of these two masses of hill are some of the densest in the Presidency.

Pālghāt Town (*Pālkādu*, 'jungle of *pāl* trees').—Head-quarters of the subdivision and *tāluk* of the same name in Malabar District, Madras, situated in 10° 46′ N. and 76° 39′ E., 335 miles by rail from Madras city.

It lies on the main road from Malabar to Coimbatore and the east coast, in the curious gap in the Western Ghāts to which it gives its name; and its position as key to the West Coast has always made it a place of importance both strategically and commercially. The Pālghāt fort is said to have existed from very ancient times, but little is known of the early history of the place. The Pālghāt Achchan was originally a tributary of the Zamorin, but he had become independent before the beginning of the eighteenth century. In 1757 he sent a deputation to Haidar Alī praying for help against an invasion threatened by the Zamorin. Haidar seized the opportunity of gaining such an important position as Pālghāt, and from that time to 1790 the fort was continually in the hands of the Mysore Sultāns or the British. It was first taken by the latter in 1768, when Colonel Wood captured it during his raid on Haidar Alī's fortresses, but it was retaken by Haidar a few months later. It was again captured by Colonel Fullarton in

1783, but abandoned next year. In 1790 it was finally captured by Colonel Stuart, and from that time was used as a base for the operations which ended in the storming of Seringapatam. The fort continued to be garrisoned till the middle of last century. It is now used for the *tāluk* office.

Pālghāt is the second largest town in Malabar, its population in 1901 being 44,177, of whom 37,285 were Hindus, 5,535 Musalmāns, and 1,342 Christians. It is the centre in Malabar of the Pattars or east-coast Brāhmans. It was made a municipality in 1869. The income and expenditure during the decade ending 1900 averaged Rs. 62,000. In 1903-4 the income and expenditure were Rs. 80,000 and Rs. 79,900 respectively, the chief sources of income being the taxes on houses and land and the fees at the Victoria College. The Victoria College is one of the most successful second-grade colleges in the Presidency. It was founded as a school in 1866, and in 1888 was raised to the rank of a college and affiliated to the Madras University. In March, 1904, 488 students were on the rolls, of whom 138 were in the college department. There are also in the town religious and educational establishments belonging to the Roman Catholic and German missions. Pālghāt is the centre of the grain and miscellaneous trade between East Malabar and the adjoining Districts, and is a growing town. It contains two large bazars and a permanent market, in which a brisk trade is done in food-grains, tobacco, oil, and cloths, and in the grass mats for which the town is celebrated. There is also considerable trade in timber, which is brought down from the Pālghāt and Walavanād forests and exported by rail.

Pāli (or Mārwār Pāli).—Head-quarters of a district of the same name in the State of Jodhpur, Rājputāna, situated in 25° 47′ N. and 73° 19′ E., on the right bank of the Bāndi river, and on the Jodhpur-Bīkaner Railway. Population (1901), 12,673. In the town are a post office, an Anglo-vernacular school, and a hospital. The principal industries are copper-working, ivory-carving, dyeing, and cotton-printing. The town comprises an ancient and a modern quarter, each containing several temples. The most noteworthy are that of Somnāth, with an inscription dated A.D. 1143, and that of Naulākha, which is remarkable for having a mosque within its courtyard (probably erected to preserve it from Muhammadan vandalism). Pāli was held by a community of Brāhmans in grant from the Paramāra and Parihār Rājputs till the advent of the Rāthors from Kanauj (about 1212), when Rao Siāhjī became its master. Before the construction of the railway it was an important trade centre, and in 1836 was visited by an outbreak of plague, the germs of which are supposed to have been imported in silks from China.

Pālitāna State.—State in the Kāthiāwār Political Agency, Bom-

bay, lying between 21° 23′ and 21° 42′ N. and 71° 31′ and 72° E., with an area of 289 square miles. It is bounded on the south by Baroda territory, and on the north, east, and west by Bhaunagar territory. The Shetrunji river, with its tributaries the Rājaval and Khāri, passes through the State. The climate is hot, and fever is prevalent. The annual rainfall averages about 25 inches.

The family of the chief is descended from Shāhjī, second son of Sejakjī, the chief of Bhaunagar being descended from the eldest son, and the chief of Lāthi from the third. The ruler executed the usual engagements in 1807.

The family was for many years engaged in a dispute with the Jains concerning the control of Shetrunja hill (*see* PĀLITĀNA TOWN). This hill, which rises above the town of Pālitāna, is covered with Jain temples, and is the resort of innumerable pilgrims. Inquiry seems to show that, many years before the Gohel chiefs established themselves in Surāshtra, the Jains worshipped in Shetrunja. They produce an imposing array of deeds from the Mughal emperors and viceroys, ending with one from prince Murād Baksh (1650), which confers the whole district of Pālitāna on Sāntidās the jeweller and his heirs. The firm of Sāntidās supplied Murād Baksh with money for war when he went with Aurangzeb (1658) to fight Dārā at Agra and assume the throne. On the decay of the Mughal power jurisdiction over Pālitāna fell into the hands of the Gohel chief, a tributary of the Gaikwār. While, therefore, the whole mountain is regarded as a religious trust, it is under the jurisdiction of the chief, for whose protection the Shrāwaks have long paid a yearly subsidy. Under a decision of Major Keatinge's in 1863, the representatives of the Jain community had to pay a lump sum of Rs. 10,000 per annum for ten years to the chief, in lieu of his levying a direct tax of Rs. 2 a head on all pilgrims visiting the shrines, with the proviso that a scrutiny lasting two years, or longer if necessary, might be demanded by either side at the termination of that period, with a view to ascertain whether the yearly sum of Rs. 10,000 was more or less than the right amount. The chief demanded such a scrutiny in 1879, and, due arrangements having been made, the count of pilgrims commenced on April 23, 1880. The claims of the chief were settled for forty years by an annual payment of Rs. 15,000, commencing from 1886. A decision of the British Government, given in March, 1877, while it upholds the chief's legitimate authority, secures to the sect its established possessions, and maintains the sacred isolation of the hill.

The chief is a Hindu of the Gohel clan of Rājputs, and is entitled to a salute of 9 guns. The family hold a *sanad* authorizing adoption; in matters of succession the rule of primogeniture is followed. Since the death of the last Thākur Sāhib in 1905, the State has

been administered by Government, owing to the minority of the present chief.

The population at the last four enumerations was: (1872) 51,476, (1881) 49,271, (1891) 60,848, and (1901) 52,856. Hindus number 44,456, Musalmāns 4,328, and Jains 4,047. During the last decade the population decreased by 15 per cent., owing to the famine of 1899-1900. The State contains one town, PĀLITĀNA, the capital; and 90 villages.

In 1903-4 the State contained 183 square miles of land under cultivation, of which 9 square miles were irrigated. The principal crops are grain, sugar-cane, and cotton. Horse-breeding is carried on in the State paddocks, the aim being to breed from the pure Kāthi stock. There are two good metalled roads in the State, one from Pālitāna to Songad and the other from Pālitāna to Gariadhar. There are two cotton-ginning factories.

Pālitāna ranks as a second-class State in Kāthiāwār. During the lifetime of the late chief there were five courts for the administration of civil and criminal justice, and he had power to try his own subjects in capital cases. The gross revenue is estimated at 6⅓ lakhs, chiefly derived from land. The State pays a tribute of Rs. 10,364 jointly to the Gaikwār of Baroda and the Nawāb of Junāgarh. No transit dues are levied. There is one municipality, at PĀLITĀNA TOWN, with an income (1903-4) of about Rs. 4,500. An armed police force of 113 men, including mounted and foot police, was maintained in 1905. In 1903-4 the jail contained a daily average of 26 prisoners, and there were 19 schools with 1,088 pupils. The State has a hospital and one dispensary, which treated 20,000 persons in 1903-4; and 1,330 persons were vaccinated in the same year.

Pālitāna Town.—Capital of the State of the same name in Kāthiāwār, Bombay, situated in 21° 31′ N. and 71° 53′ E., at the eastern base of the famous Shetrunja (Satrunjaya) hill; distant from Ahmadābād 120 miles south-west, and from Bombay 190 north-west. Population (1901), 12,800. It was formerly the chief town of a Mughal *pargana*.

Shetrunja hill, to which reference has been made in the article on PĀLITĀNA STATE, is sacred to Adināth, a Tīrthankar or hierarch of the Jains. It is 1,977 feet above sea-level. The top is divided into two peaks, but the valley between has been partly built over by a wealthy Jain merchant. The entire summit is covered with temples, among which the most famous are those of Adināth, Kumār Pāl, Vimalasah, Sampriti Rājā, and the Chaumukh. This last is the most lofty, and can be clearly distinguished at a distance of over 25 miles. Shetrunja is the most sacred of the five sacred hills of the Jains. Mr. Kinloch Forbes in the *Rās Māla* describes it as the 'first of

all places of pilgrimages, the bridal hall of those who would win everlasting rest'; and adds:—

'There is hardly a city in India, through its length and breadth, from the river of Sind to the sacred Ganges, from Himālaya's diadem of ice peaks to the throne of his virgin daughter, Rudra's destined bride, that has not supplied at one time or other contribution of wealth to the edifices which crown the hill of Pālitāna. Street after street, square after square, extend these shrines of the Jain faith, with their stately enclosures, half-palace, half-fortress, raised in marble magnificence upon the lonely and majestic mountain, and, like the mansions of another world, far removed in upper air from the ordinary tread of mortals.'

Owing to the special sanctity of Shetrunja, Jains from all parts of India are anxious to build temples on the hill; and all members of the Jain faith feel it a duty to perform, if possible, one pilgrimage here during their life.

The following description of this wonderful temple-hill is condensed from an account by Dr. Burgess:—

'At the foot of the ascent there are some steps with many little canopies or cells, a foot and a half to three feet square, open only in front, and each having in its floor a marble slab carved with the representation of the soles of two feet (*charana*)—very flat ones, and generally with the toes all of one length. A little behind, where the ball of the great toe ought to be, there is a diamond-shaped mark divided into four smaller figures by two cross lines, from the end of one of which a waved line is drawn to the front of the foot. Round the edges of the slab there is usually an inscription in Devanāgarī characters, and between the footmarks an elongated figure like a head of Indian corn with the point slightly turned over. These cells are numerous all the way up the hill, and a large group of them is found on the south-west corner of it behind the temple of Adiswar Bhagwān. They are the temples erected by poorer Shrāwaks or Jains, who, unable to afford the expense of a complete temple, with its hall and sanctuary enshrining a marble *mūrti* or image, manifest their devotion to their creed by erecting these miniature temples over the *charana* of their Jinas or Arhats.

'The path is paved with rough stones all the way up, only interrupted here and there by regular flights or steps. At frequent intervals also there are resthouses, more pretty at a distance than convenient for actual use, but still deserving of attention. High up we come to a small temple of the Hindu monkey-god Hanumān, the image bedaubed with vermilion in ultra-barbaric style. At this point the path bifurcates—to the right leading to the northern peak, and to the left to the valley between, and through it to the southern summit. A little higher up, on the former route, is the shrine of Hengar, a Musalmān *pīr*, so that Hindu and Moslem alike contend for the representation of their creeds on this sacred hill of the Jains.

'On reaching the summit of the mountain the view that presents

itself from the top of the walls is magnificent in extent: a splendid setting for the unique picture—this work of human toil we have reached. To the east, the prospect extends to the Gulf of Cambay near Gogha and Bhaunagar; to the north it is bounded by the granite range of Sihor and the Chamārdi peak; to the north-west and west the plain extends as far as the eye can reach, except where broken due west by the summits of Mount Girnār—revered alike by Hindu, Buddhist, and Jain, the latter of whom claim it as sacred to Neminātli, their twenty-second Tīrthankar. From west to east, like a silver ribbon across the foreground to the south, winds the Shetrunji river, which the eye follows until it is lost between the Talāja and Khokara hills in the south-west. But after this digression let us return to the scene beside us. How shall I describe it? It is truly a city of temples, for, except a few tanks, there is nothing else within the gates, and there is a cleanliness withal, about every square and passage, porch and hall, that is itself no mean source of pleasure. The silence, too, is striking. Now and then in the mornings you hear a bell for a few seconds, or the beating of a drum for as short a time, and on holidays chants from the larger temples meet your ear; but generally during the after-part of the day the only sounds are those of vast flocks of pigeons that rush about spasmodically from the roof of one temple to that of another, apparently as an exercise in fluttering and just to keep their wings in use. Parroquets and squirrels, doves and ringdoves abound, and peacocks are occasionally met with on the outer walls. The top of the hill consists of two ridges, each about 350 yards long, with a valley between; the southern ridge is higher at the western end than the northern, but this is in turn higher at the eastern extremity. Each of these ridges, and the two large enclosures that fill the valley, are surrounded by massive battlemented walls fitted for defence. The buildings on both ridges, again, are divided into separate enclosures, called *tūks*, generally containing one principal temple, with varying numbers of smaller ones. Each of these enclosures is protected by strong gates and walls, and all gates are carefully closed at sundown.'

A description of one of these *tūks* must suffice here, but the reader who wishes to pursue the subject will find an account of the other temples in Mr. Burgess's *Notes of a Visit to Satrunjaya Hill* (Bombay, 1869). The *tūk* now to be described is that of Khartarvasi, of which the principal temple is that of the Chaumukh or 'four-faced' Jaina occupying the centre.

'It is,' says Mr. Burgess (*op. cit.*), 'a fine pile of the sort, and may be considered a type of its class. It stands on a platform raised fully 2 feet above the level of the court, and 57 feet wide by about 67 in length, but the front of the building extends some distance beyond the end of this. The body of the temple consists of two square apartments, with a square porch or *mandap* to the east, from which a few steps ascend to the door of the *antarāla* or hall, 31 feet square inside, with a vaulted roof rising from twelve pillars. Passing through this we enter by a large door into the shrine or *garbha griha*, 23 feet square, with

four columns at the corners of the altar or throne of the image. Over this rises the tower or *vimāna* to a height of 96 feet from the level of the pavement. The shrine in Hindu temples is always dark and entered only by the single door in front. Jain temples, on the contrary, have very frequently several entrances. In this instance, as in that of most of the larger temples, besides the door from the *antarāla*, three other large doors open out into porticoes on the platform—a veranda being carried round this part of the building from one door to another. The front temple has also two side doors opening upon the platform. The walls of the shrine, having to support the tower, are very thick, and contain cells or chapels opening from the veranda; thus the doors into the shrine stand back into the wall. There are ten cells and some of them contain little images of Tīrthankars; those at the corners open to two sides. The pillars that support the veranda deserve notice. They are of the general form everywhere prevalent here—square columns, to the sides of which we might suppose very thin pilasters of about half the breadth had been applied. They have high bases, the shafts carved with flower patterns each different from its fellow, the usual bracket capitals slanting downwards on each side and supporting *gopis*, on whose heads rest the abacus—or rather these figures, with a sort of canopy over the head of each, form second and larger brackets. The floors of the larger temples are of beautifully tesselated marble—black, white, and yellowish brown. The patterns are very much alike, except in details, and consist chiefly of varieties and combinations of the figure called by the Jains *nandvarta*—a sort of complicated square fret—the cognizance of the eighteenth Jaina. The shrine contains a *sinhāsan* or pedestal for the image; in this temple it is of the purest white marble, fully 2 feet high and 12 square. Each face has a centre panel, elaborately carved, and three of less breadth on each side, the one nearer the centre always a little in advance of that outside it.

'On the throne sit four large white marble figures of Adināth, not especially well proportioned, each facing one of the doors of the shrine. These are large figures, perhaps as large as any on the hill; they sit with their feet crossed in front, after the true Buddha style, the outer side of each thigh joining that of his fellow, and their heads rising about 10 feet above the pedestal. The marble is from Mokhrano in Mārwār, and the carriage is said to have cost an almost incredible sum. The aspect of these, and of all the images, is peculiar; frequently on the brow and middle of the breast there is a brilliant, set in silver or gold, and almost always the breasts are mounted with one of the precious metals, while there are occasionally gold plates on the shoulders, elbow, and knee-joint, and a crown on the head—that on the principal one in the Motisah being a very elegant and massive gold one. But the peculiar feature is the eyes, which seem to peer at you from every chapel like those of so many cats. They appear to be made of silver overlaid with pieces of glass, very clumsily cemented on, and in every case projecting so far, and of such a form, as to give one the idea of their all wearing spectacles with lenticular glasses over very watery eyes in diseased sockets.

'The original temple in this *tūk* is said to date back to a king

Vikrama; but whether he of the Samvat era, 57 B.C., or Harsha Vikramāditya, about A.D. 500, or some other, is not told. It appears to have been rebuilt in its present form about A.D. 1619 by Seva Somjī of Ahmadābād, for we read thus: "Samvat 1675, in the time of Sultān Nūr-ud-dīn Jahāngīr, Sawāi Vijaya Rājā, and the princes Sultān Khushru and Khurma, on Saturday, Baisākh Sudi 13th, Devrāj and his family, of which were Somjī and his wife, Rājāldevī, erected the temple of the four-faced Adināth," &c. A stair on the north side leads to the upper storey of the tower. This temple is said to contain a hundred and twenty-five images.'

Fergusson, in his *History of Indian and Eastern Architecture*, has the following remarks on the Jain temple-cities, with special reference to this the greatest of them all:—

'The grouping together of their temples into what may be called "cities of temples" is a peculiarity which the Jains practised to a greater extent than the followers of any other religion in India. The Buddhists grouped their *stūpas* and *vihāras* near and round sacred spots, as at Sānchi, Manikyāla, or in Peshāwar, and elsewhere; but they were scattered, and each was supposed to have a special meaning, or to mark some sacred spot. The Hindus also grouped their temples, as at Bhuvaneswar or Benares, in great numbers; but in all cases, so far as we know, because these were the centres of a population who believed in the gods to whom the temples were dedicated, and wanted them for the purpose of their worship. Neither of these religions, however, possesses such a group of temples, for instance, as that at Satrunjaya, or Pālitāna as it is usually called, in Gujarāt. No survey has yet been made of it, nor have its temples been counted; but it covers a large space of ground, and its shrines are scattered by hundreds over the summits of two extensive hills and the valley between them. The larger ones are situated in *tūks* or separate enclosures, surrounded by high fortified walls; the smaller ones line the silent streets. A few *yatis* or priests sleep in the temples and perform the daily services, and a few attendants are constantly there to keep the place clean, which they do with the most assiduous attention, or to feed the sacred pigeons, who are the sole denizens of the spot; but there are no human habitations properly so called within the walls. The pilgrim or the stranger ascends in the morning and returns when he has performed his devotions or satisfied his curiosity. He must not eat, or at least must not cook, his food on the sacred hill, and must not sleep there. It is a city of the gods, and meant for them only, and not intended for the use of mortals.

'Jaina temples and shrines are, of course, to be found in cities where there are a sufficient number of votaries to support a temple, as in other religions; but beyond this, the Jains seem, almost more than any other sect, to have realized the idea that to build a temple, and to place an image in it, was in itself a highly meritorious act, wholly irrespective of its use to any of their co-religionists. Building a temple is with them a prayer in stone which they conceive to be eminently acceptable to the deity, and likely to secure them benefits both here and hereafter.

'It is in consequence of the Jains believing to a greater extent than the other Indian sects in the efficacy of temple-building as a means of salvation that their architectural performances bear so much larger a proportion to their numbers than those of other religions. It may also be owing to the fact that nine out of ten, or ninety-nine in a hundred, of the Jain temples are the gifts of single wealthy individuals of the middle classes, that these buildings generally are small and deficient in that grandeur of proportion that marks the buildings undertaken by royal command or belonging to important organized communities. It may, however, be also owing to this that their buildings are more elaborately finished than those of more national importance. When a wealthy individual of the class who build these temples desires to spend his money on such an object, he is much more likely to feel pleasure in elaborate detail and exquisite finish than in great purity or grandeur of conception.

'All these peculiarities are found in a more marked degree at Pālitāna than at almost any other known place, and, fortunately for the student of the style, extending through all the ages during which it flourished. Some of the temples are as old as the eleventh century, and they are spread pretty evenly over all the intervening period down to the present century. But the largest number, and some of the most important, are now in course of erection, or were erected in the present century, or in the memory of living men. Fortunately, too, these modern examples by no means disgrace the age in which they are built. Their sculptures are inferior, and some of their details are deficient in meaning and expression; but, on the whole, they are equal, or nearly so, to the average examples of earlier ages. It is this that makes Pālitāna one of the most interesting places that can be named for the philosophical student of architectural art, inasmuch as he can there see the various processes by which cathedrals were produced in the Middle Ages, carried on on a larger scale than almost anywhere else, and in a more natural manner. It is by watching the methods still followed in designing buildings in that remote locality that we become aware how it is that the uncultivated Hindu can rise in architecture to a degree of originality and perfection which has not been attained in Europe since the Middle Ages, but which might easily be recovered by following the same processes.'

Pāliyād.—Petty State in KĀTHIĀWĀR, Bombay.

Palk Strait.—Palk Bay is a gulf lying between the east coast of the Madras Presidency and the northern part of Ceylon, in about 9° and 10° N. and 79° and 80° E. It is named after Robert Palk, Governor of Madras (1755–63). The gulf is bounded by POINT CALIMERE and the coast of Tanjore to the northward and westward; by ADAM'S BRIDGE and the islands at either end of it to the south; and by the northern part of Ceylon and the adjacent islands to the east. The Dutch recognized three channels leading between Point Calimere and the northern end of Ceylon into Palk Bay; but probably only one of these can be considered safe for large ships. This is the Palk Strait.

Shoals, currents, sunken rocks, coral reefs, and sandy spits abound on either side, rendering the passage one of some difficulty and danger. The north-east monsoon often sweeps down the Strait into Palk Bay with great fury, and there is frequently a heavy and confused swell at the southern end near Pāmban Island. The effect of the south-west monsoon is, however, little felt.

An account of the scheme for opening a channel for ocean steamers from Palk Strait to the Gulf of Manaar will be found under PĀMBAN.

Pālkole.—Town in Kistna District, Madras. *See* PĀLAKOLLU.

Pālkonda Hills (*pāl*, 'milk,' and *konda*, 'a hill,' said to be so called from the excellent grazing upon them).—Range of mountains in Cuddapah District, Madras, lying between 13° 36′ and 14° 25′ N. and 78° 16′ and 79° 15′ E.; average elevation above the sea, about 2,000 feet; highest point, Buttaid, 3,060 feet. Starting from the sacred hill of Tirupati, the hills run north-west through Cuddapah District for 45 miles and then turn nearly due west, passing across to the frontier of Anantapur. The latter portion is sometimes called the Seshāchalam range. Mr. Gribble describes these hills as follows in the *Cuddapah Manual*:—

'This is not only the largest and most extensive of all the Cuddapah ranges, but it also presents very marked features, and differs in appearance from the others. The Tirupati hill is 2,500 feet above the sea, and the Pālkonda range continues at about the same uniform height very nearly throughout the whole of its extent. There are very few prominent peaks; and at a distance of a few miles it presents the appearance, to any one standing on the inside portion, of a wall of unvarying height, shutting the country in as far as the eye can reach. The top of this range is more or less flat, forming a table-land of some extent. On both sides the slopes are well clothed with forests, which near the railway are especially valuable, and form the important Bālapalle, Yerraguntlakota, and Kodūr Reserves. A noticeable feature in this range, and especially on its south-western slopes, is the manner in which the quartzite rocks crop out at the summit. The rock suddenly rises perpendicularly out of the slope, and is wrested and contorted into various fantastic shapes, which not unfrequently give the appearance of an old ruined castle or fort. These hills were in former days a favourite resort of dacoits or gang-robbers, probably because they are not so feverish as the other hills of the main division. They are now nearly free from these pests of society. Wild beasts, however, are still to be found.'

Tigers are occasionally seen; of leopards there are a large number, and they are very destructive; a few *sāmbar* are to be found and some bears, but the hills have been too much exploited to afford a good field for sportsmen.

Pālkonda Tāluk.—*Tāluk* in Vizagapatam District, Madras, lying

between 18° 22′ and 18° 47′ N. and 83° 31′ and 83° 56′ E., on the extreme eastern boundary of the District, part of it falling within the Agency limits. Its total area is 502 square miles. The ordinary tracts are thickly peopled, and cultivated with rice, indigo, pulses, and grain crops, irrigated from the Nāgāvali river. The Agency portion is hilly and forest-clad, and contains about 56 square miles of 'reserved' forest. The population of the ordinary tracts in 1901 was 215,376, compared with 201,331 in 1891, living in two towns, PĀLKONDA (population, 10,615), the *tāluk* head-quarters, and RAZAM (5,096); and 334 villages. In the Agency tract the population in 1901 was 11,245 persons (chiefly Savaras), compared with 11,824 in 1891, living in 106 villages. The greater part of the *tāluk* is held on *ryotwāri* tenure, but large areas belong to the Rājās of BOBBILI and VIZIANAGRAM. A considerable proportion of the *ryotwāri* land is irrigated, chiefly from tanks. The demand for land revenue and cesses in 1903–4 was Rs. 3,04,000.

When the NORTHERN CIRCĀRS were ceded to the British in 1765, the *tāluk* was a *zamīndāri*, feudatory to the Rājā of Vizianagram. From 1796 onwards there were constant disputes and attempted disturbances, and finally in 1832 the *zamīndār* of Pālkonda broke into open rebellion. This was put down with the aid of troops, and the *zamīndāri* was then declared forfeit to Government and the male members of the family were imprisoned. From 1833 to 1846 the estate was managed by the Collector, as also (from 1811) was the neighbouring estate of Honjaram, which had been purchased by Government for arrears of revenue. In 1846 an arrangement was made with a European firm at Madras, whereby the two estates of Pālkonda and Honjaram were leased to them for Rs. 1,31,000. This arrangement lasted till 1892, when Government resumed direct management, the two estates being amalgamated to form the *ryotwāri* portion of the *tāluk*.

Pālkonda Town.—Head-quarters of the *tāluk* of the same name in Vizagapatam District, Madras, situated in 18° 36′ N. and 83° 46′ E., at the crossing of the roads passing from Pārvatīpuram to the coast, and from the low country, through the Sītampeta pass, to Ganjām District, and thus a place of some local importance. The population, which is increasing slowly, numbered 10,615 in 1901.

Pālkot.—Town in the Gumla subdivision of Rānchī District, Bengal, situated in 22° 52′ N. and 84° 39′ E. Population (1901), 3,246. It is one of the principal trade centres in the District, and the head-quarters of a police circle, and has given its name to a *pargana*.

Palladam Tāluk.—Central *tāluk* of Coimbatore District, Madras, lying between 10° 47′ and 11° 21′ N. and 77° 1′ and 77° 30′ E., with an

area of 741 square miles. Population increased from 270,390 in 1891 to 300,904 in 1901. It contains one town, TIRUPPŪR (population, 6,056); and 193 villages, including PALLADAM (3,187), the head-quarters. The demand for land revenue and cesses in 1903-4 amounted to Rs. 4,87,000. It is a flat and dreary plain without hills or forests. The only river is the Noyil. The irrigated area is larger than in any other *tāluk* in the District, but nearly all of this is served by wells, with which it is better supplied than any other. There is much black cotton soil in the south and south-west, and the area under cotton is larger than anywhere else in the District. *Cholam* is by far the most widely grown crop, and some tobacco is raised with irrigation from wells. The rainfall is very small, averaging only about 20 inches annually.

Palladam Village.—Head-quarters of the *tāluk* of the same name in Coimbatore District, Madras, situated in 11° 0′ N. and 77° 17′ E. Population (1901), 3,187. There are large tracts of black cotton soil in the neighbourhood, and the town has three cotton-presses. It also contains the ruins of an old fort.

Pāl Laharā.—One of the Tributary States of Orissa, Bengal, lying between 21° 9′ and 21° 41′ N. and 85° 0′ and 85° 24′ E., with an area of 452 square miles. It is bounded on the north by the State of Bonai; on the east by Keonjhar; on the south by Tālcher; and on the west by Bāmra. The east and north of the State are occupied by hills. A magnificent mountain, MALAYAGIRI (3,895 feet), the loftiest peak in the Orissa States, towers above the lesser ranges. The agricultural products consist of the usual coarse grains and oilseeds. Nothing worthy of the name of trade is carried on. There is some excellent *sāl* (*Shorea robusta*) in the northern hills, but no means of conveying it to a market.

Pāl Laharā was formerly feudatory to Keonjhar, and its chief still pays a tribute or quit-rent into the office of the Superintendent of the Tributary Mahāls, where it is placed to the credit of Keonjhar. The State has a revenue of Rs. 29,000, and its tribute payable to Government is Rs. 267. The population increased from 19,700 in 1891 to 22,351 in 1901, distributed among 265 villages. The density is 49 persons per square mile, or less than in any other of the Orissa States. Hindus number 20,770, Animists 1,540, and Muhammadans 41, the most numerous castes being Chāsas (5,000) and Pāns (4,000). The leaf-wearing Juāngs are still met with in the outskirts of the Malayagiri range. The old Midnapore-Sambalpur road passes through the north of the State. The village containing the Rājā's residence is connected with Tālcher and Angul by a fair-weather road of recent construction. The State maintains an upper primary and seven lower primary schools, and a dispensary.

Pallāvaram.—Town and cantonment in the Saidapet *tāluk* of Chingleput District, Madras, situated in 12° 59′ N. and 80° 10′ E., on the South Indian Railway, 3 miles south of St. Thomas's Mount. Population (1901), 6,416. It used to be called the Presidency Cantonment, native troops being kept here for garrisoning and protecting Madras city. The temperature of the place is high, but it is far from being unhealthy, and water is good and abundant. Pallāvaram is now a place of residence for European pensioners and a dépôt for native infantry. It used to contain several tanneries, but the industry has declined in consequence of the introduction in America of the superior process of chrome tanning.

Palmā.—Deserted Jain settlement, situated within a few miles of Purūlia and near the Kāsai river in the head-quarters subdivision of Mānbhūm District, Bengal. The principal temple stands on a mound covered with stone and brick, the débris of buildings. There are several sculptures of nude male figures standing on pedestals and under canopies, with Egyptian head-dresses, the arms hanging down straight by their sides, the hands turned in and touching the knees. There can be no doubt that these images represent the Tīrthankaras of the Jains.

Palmaner Tāluk.—*Tāluk* in the west of North Arcot District, Madras, lying between 12° 46′ and 13° 17′ N. and 78° 25′ and 78° 49′ E. Area, 439 square miles; population in 1901, 51,575, compared with 48,135 in 1891; number of villages, 91. Demand for land revenue and cesses in 1903-4, Rs. 92,000. The *tāluk* is situated upon the Mysore plateau, about 2,500 feet above sea-level. It is consequently much cooler than the lower parts of the District, and in the winter months the mornings are quite sharp. There is a large extent of jungle. Though devoid of railway communication, the *tāluk* is well provided with roads. The head-quarters are at the village of the same name.

Palmaner Village.—Head-quarters of the *tāluk* of the same name in North Arcot District, Madras, situated in 13° 13′ N. and 78° 46′ E. Population (1901), 4,850. Palmaner stands on the plateau of Mysore at a height of 2,247 feet above sea-level, and is much cooler than the lower parts of the District. It has accordingly always been a sanitarium for the North Arcot officials, and before the route to the Nīlgiris was opened up was resorted to also by Europeans from Madras. It contains several excellent bungalows. Some of the gorges and valleys in the hills round about are beautiful. A favourite resort is Gangamma's valley, where a small stream falls from a height of about 200 feet into a deep pool shut in on all sides but one by precipitous walls of rock.

Palmyras Point.—Headland in the Kendrāpāra subdivision of Cuttack District, Bengal, situated in 20° 46′ N. and 86° 59′ E., and

constituting a landmark for vessels making for the Hooghly from the south.

Palnād.—*Tāluk* in the extreme west of Guntūr District, Madras, lying between 16° 10′ and 16° 44′ N. and 79° 14′ and 80° E., with an area of 1,041 square miles. The population in 1901 was 153,638, compared with 142,011 in 1891, living in 96 villages. The demand on account of land revenue and cesses in 1903–4 amounted to Rs. 4,35,000. The head-quarters were recently transferred from Dāchepalle to Guruzāla. The *tāluk* is a more or less elevated tract, intersected by numerous mountain torrents and almost surrounded by low outliers from the Eastern Ghāts. Bounded on the north and west by the Kistna river, which is here both narrow and swift, and fringed on the south and east by hills and jungles, it is a somewhat inaccessible spot, and its history and natural conditions differ considerably from those of the rest of the District. Most of the cultivation is 'dry,' and after the first rains the country forms a grazing ground for the herds of the ryots of the Kistna delta. The climate is extremely variable, the heat being very great in the summer months, while comparatively low temperatures are registered after the monsoons are over.

Palni Tāluk.—*Tāluk* in the Dindigul subdivision in the north of Madura District, Madras, lying between 10° 8′ and 10° 43′ N. and 77° 15′ and 77° 55′ E., with an area (including the Kodaikānal *tāluk*, which formerly belonged to it) of 599 square miles. The population in 1901 was 214,972, compared with 195,050 in 1891. It contains one town, PALNI (population, 17,168), the head-quarters; and 117 villages. The demand for land revenue and cesses in 1903–4 amounted to Rs. 2,96,000, of which Rs. 48,000 was *peshkash* paid by *zamīndāri* estates. The *tāluk* is bounded on the south by the PALNI HILLS. It is almost all unirrigated, but patches of 'wet' land are supplied by about 50 tanks, by the rivers Shanmukhanadī and Nangānji, and by the Nallatanga stream. Compared with other parts of the District, it is not well protected from famine.

Palni Hills.—Range of hills in Madura District, Madras, connected with the WESTERN GHĀTS and forming part of that mountain system. They lie between 10° 1′ and 10° 26′ N. and 77° 14′ and 77° 52′ E., running out from the main line of the Ghāts (which here consists of the ANAIMALAI and Travancore Hills) in a north-easterly direction. They are about 54 miles in length and about 15 miles wide on the average, occupying an area of 800 square miles. They get their English name from the town of PALNI, which lies just to the north of them; the native appellation is Varāhagiri, or 'boar hill.' They consist of two well-marked divisions, the more eastern of which averages from 3,000 to 4,000 feet in height and is known as the Lower Palnis, while the western has a mean elevation of 7,000 feet and in one place,

Vembādi Shola Hill, rises to 8,218 feet above the sea. The favourite sanitarium of KODAIKĀNAL, which stands on the southern edge of the central portion of the range, is about 7,200 feet in elevation.

The Palnis consist entirely of Archaean plutonic rocks of the charnockite family. On the south side these often end in steep, sheer precipices, but on the north they slope more gradually down to the plains.

In general appearance the upper ranges greatly resemble the Nīlgiris. They have the same grass-covered downs with the same thick, green woods nestling in their many wrinkles, and variety in the scenery is afforded by the same bold peaks raising their shoulders above the surrounding lower levels. The annual rainfall is 65 inches, compared with an average of 47 inches at OOTACAMUND; but it is more evenly distributed, so that Kodaikānal avoids the three arid months at the beginning of the year which wither the vegetation at Ootacamund, but at the same time is less damp and boasts a clearer atmosphere. Though slight frosts are common in December and January, the climate is also milder on the whole.

The forests on the higher levels contain some teak and black-wood, and on the lower slopes *Pterocarpus* is common; but difficulties of transport are considerable. English fruit and vegetables grow readily at Kodaikānal, and on the Lower Palnis nearly 6,000 acres are cultivated with coffee, mostly with the aid of European capital. There is only one regular *ghāt* up the hills, and that is the bridle-path which leads to Koḍaikānal from the south. The foot of this is 30 miles from the station of Ammayanāyakkanūr on the South Indian Railway, and visitors always go to the sanitarium by this route. The hills on that side are so steep that the construction of a cart-track up them would present considerable difficulties; 'traces' have been made for roads to the summit from other directions, but hitherto lack of funds has prevented their construction.

The Palnis are inhabited by several indigenous communities, but these are immigrants from the low country who do not differ in physical characteristics from their fellow castemen who still reside on the plains. The most noteworthy of them are the Paliyans, who are also found on the Anaimalais and the Western Ghāts where they run through Tinnevelly. They are described as a miserable jungle-folk, who have no settled habitations, dwell in crevices in rocks or the rudest of huts, and live upon leaves, roots, vermin, and honey.

The other inhabitants of the range subsist mainly by cultivation. Rice is one of the chief crops; and the skill with which the mountain streams are diverted so as to irrigate successions of narrow terraces excavated down the slopes of the hills is a strong testimony to the ingenuity and industry of the people.

Palni Town.—Head-quarters of the *tāluk* of the same name in Madura District, Madras, situated in 10° 28′ N. and 77° 31′ E., 34 miles west of Dindigul, and 69 miles north-west of Madura city. The population in 1901 was 17,168. Palni was created a municipality in 1886. The receipts and expenditure during the ten years ending 1902–3 averaged Rs. 14,300 and Rs. 13,800 respectively. In 1903–4 the income, most of which was derived from tolls and the taxes on houses and land, was Rs. 20,400; and the expenditure was Rs. 20,000. The chief object of interest is an ancient temple to Subrahmanya, which is resorted to by crowds of devotees from many parts of Southern India and especially from Malabar. The town at present suffers from lack of railway communication, but several schemes for remedying this are under consideration.

Pāloncha Samasthān.—A *samasthān* or tributary estate in the south-east of Warangal District, Hyderābād State, consisting of six sub-*tāluks*, with an area of about 800 square miles, and a population (1901) of 38,742. The revenue is said to be only Rs. 70,000, and the tribute paid to the Nizām is Rs. 45,875. The estate further receives an annual sum of Rs. 4,716 as *deshmukh's* fees from the Nizām, and the Rājā owns the estates of Bhadrāchalam and Rekapalli in the Godāvari District of Madras.

The estate appears to have existed before the reign of Pratāp Rudra of Warangal, who conferred the title of Ashwarao on the Rājā in appreciation of the latter's horsemanship, *ashwa* in Sanskrit meaning 'horse.' After the capture of Warangal by the Musalmāns, the king of Delhi bestowed the *parganas* of Hasanābād and Sankargiri (Paloncha) upon Anappa Ashwarao in 1324, and these remained in possession of the family for eighteen generations till 1698. In 1769 Narsinha Ashwarao was killed in battle by Zafar-ud-daula, who plundered the Rājā's treasury and took possession of all the documents and ancient *sanads* engraved on copper-plates. In 1798 the Nizām granted a *sanad* to Venkatrām Ashwarao, with the stipulation that he should maintain 2,000 cavalry and 3,000 foot soldiers; but this condition did not long remain in force. Internal feuds and dissensions between the two principal branches of the family now commenced, and continued till 1858, when Sir Sālār Jang, the minister of Hyderābād, put an end to them by granting a fresh *sanad* to Rājā Sītārām Chandra. At the same time the two *tāluks* of Bhadrāchalam and Rekapalli, situated along the left bank of the Godāvari, were taken over by the British Government. The Rājā, who had contracted heavy debts and had mortgaged the *samasthān* to a banker, died without issue. The banker collected the revenue of the State for twelve years, and at the end of that period filed a suit and obtained a decree for 6 lakhs. The Nizām paid the banker 3 lakhs in cash, sanctioned the transfer of the two

tāluks of Mallūr and Ramanjavaram in lieu of the balance, and confiscated the estate. The Rājā's mother died in 1875, but before her death she had adopted the present Rājā, who was her daughter's son. After a prolonged inquiry, the British Government restored the two *tāluks* of Bhadrāchalam and Rekapalli to the Rājā, who also received 6 *tāluks* from the Nizām on payment of the 3 lakhs advanced to the banker. From 1324 to the present time twenty-eight Rājās have ruled in succession. Pāloncha was originally the head-quarters of the *samasthān*, after which Bhadrāchalam was for some time the residence of the Rājā, but Ashwaraopet has now become the capital.

The *samasthān* is very unhealthy and malarious, owing to a large portion of it being covered with thick jungle. The Godāvari river crosses it from north-west to south-east, dividing it into two portions, that along the right being in the Hyderābād State, and that along the left in the Madras Presidency. The bed of the river is so deep that its waters cannot be used for irrigation.

Pāloncha Tāluk.—Easternmost *tāluk* of Warangal District, Hyderābād State, with an area of 1,297 square miles. The population in 1901, including *jāgīrs*, was 31,329, compared with 32,757 in 1891. The *tāluk* contains 89 villages, of which 48 are *jāgīr*, and Borgampād (population, 3,200) is the head-quarters. This is a very thinly populated *tāluk*, containing a large forest tract, and is very malarious. The land revenue in 1901 was only Rs. 16,000. The Godāvari river forms its eastern boundary, separating it from the Godāvari District of Madras on the east. The aboriginal tribes of Gonds and Koyas number 4,480 and 10,055 respectively. Situated to the east is the *samasthān* of PĀLONCHA, with a population of 38,742, 62 villages, and an area of about 800 square miles.

Paltā.—Village in the Barrackpore subdivision of the District of the Twenty-four Parganas, Bengal, situated in 22° 48′ N. and 88° 22′ E., on the left bank of the Hooghly river, 2 miles above Barrackpore. Population (1901), 2,038. At Paltā are situated the water-works of the Calcutta Corporation. The water is pumped up from the Hooghly river and filtered, and flows to Calcutta in pipes. At this place also the grand trunk road from Calcutta crosses the Hooghly.

Pālus.—Village in the Tāsgaon *tāluka* of Sātāra District, Bombay, situated in 17° 5′ N. and 74° 31′ E., on the Karād-Tāsgaon road, about 10 miles north-west of Tāsgaon town. Population (1901), 5,070. The place consists of one broad market street and a few small lanes. The Kistna canal ends in the surrounding lands. The soil is rich, and sugar-cane is abundantly grown in the irrigated, and a good deal of cotton in the unirrigated fields.

Palwal Tahsīl.—*Tahsīl* of Gurgaon District, Punjab, lying between 27° 51′ and 28° 16′ N. and 77° 11′ and 77° 34′ E., with an area of 382

square miles. It is bounded on the east and south by the United Provinces, the river Jumna forming the eastern boundary. The population in 1901 was 172,557, compared with 149,740 in 1891. It contains the two towns of PALWAL (population, 12,830), the head-quarters, and HODAL (8,142); and 187 villages. The land revenue and cesses in 1903–4 amounted to 3·2 lakhs. The *parganas* of Palwal and Hodal, which make up the present *tahsīl*, were once held by General de Boigne. They were assigned by the British Government, and lapsed on the deaths of the assignees in 1813 and 1817. The *tahsīl* is well wooded, and consists of a fertile plain watered by the Agra Canal.

Palwal Town.—Head-quarters of the *tahsīl* of the same name in Gurgaon District, Punjab, situated in 28° 9′ N. and 77° 20′ E., on the grand trunk road between Delhi and Muttra, and also on the Delhi-Agra branch of the Great Indian Peninsula Railway. Population (1901), 12,830. A good road leads to Sohna (17 miles), whence the road is metalled to Gurgaon. Palwal is a dépôt for the cotton of the surrounding country, and a cotton-ginning factory has recently been set up, which employed 207 hands in 1904. Hindu tradition identifies Palwal with the Apelava of the Mahābhārata, which is said to have been restored by Vikramāditya. The mosque at Palwal is supported by pillars, which bear traces of Hindu idols defaced in the time of Altamsh in 1221. An elegant domed tomb of red sandstone, just outside the town on the Muttra road, is said to have been built by a *fakīr*, who levied an impost for this purpose of one slab on every cart-load of stone which passed from Agra to Delhi for the building of the fort of Salīmgarh. The municipality was created in 1867. The income and expenditure during the ten years ending 1902–3 averaged Rs. 15,000 and 14,700 respectively. In 1903–4 the income was Rs. 16,800, chiefly derived from octroi; and the expenditure was Rs. 22,100. It maintains a vernacular middle school and a dispensary.

Pāmban.—The island of Pāmban is part of the RĀMNĀD ESTATE in Madura District, Madras. Its central point is in 9° 16′ N. and 79° 18′ E.; and it lies between the mainland of Madura District on the west and Ceylon on the east, being separated from the former only by a narrow passage or channel which opens on the north into the waters of PALK STRAIT and on the south into the GULF OF MANAAR. The island is about 11 miles long by 6 wide. The eastern half is merely a narrow strip of sand running down to join ADAM'S BRIDGE; and the remainder is based on rock of coral formation, and is chiefly covered by thorny acacias or by swamp, there being little cultivation of any kind. The chief town is RĀMESWARAM, noted for its ancient temple.

The town of Pāmban, which is said to derive its name from the

tortuous, snake-like course of the above-mentioned channel, which it overlooks, is situated at the western extremity of the island in 9° 17′ N. and 79° 14′ E., and is one of the two largest seaports in Madura District. In 1901 the population was 3,462. A lighthouse rises 97 feet above high-water mark, showing a light visible at a distance of 12 or 14 miles. It is one of the chief points of departure for emigrants and other passengers to Ceylon, and it also receives the numerous pilgrims who visit the shrine at Rāmeswaram. The Ceylon Government has an emigration dépôt here. The number of passengers and pilgrims who arrive at it has increased considerably since the opening of the railway from Madura to Mandapam, on the mainland opposite the channel. The inhabitants of the town are chiefly engaged as sailors, pilots, and divers. The climate is considerably cooler than that of the mainland, and the town was formerly used as a health-resort by European officials. The ruins of a Dutch fort are still to be seen.

Pāmban Passage or Channel is a partly artificial channel which runs between the western extremity of Pāmban Island and the mainland of India, connecting Palk Strait and the Gulf of Manaar. It has been deepened by the Government in order to allow sea-going ships to pass along by this quicker and more sheltered route instead of having to go round the island of Ceylon. Geological evidence tends to show that in former times the gap was bridged by a continuous isthmus; and until it was deepened the passage was quite impracticable for ships, being obstructed by two parallel ridges of rock reaching just above high-water mark and about 140 yards apart, the space between which was occupied by a confused mass of rocks lying for the most part parallel to the ridges in horizontal strata of sandstone formation. The first proposal to deepen this channel for traffic was made by Colonel Manuel Martinez, who brought the matter to the notice of Mr. Lushington, then Collector of the Southern Provinces and afterwards Governor of Madras. Nothing, however, was done until 1822, when Colonel De Havilland recommended the institution of a regular survey, which was entrusted to Ensign (afterwards Sir Arthur) Cotton, whose name is honourably associated with other great engineering projects in Southern India. Cotton's opinion was favourable; but other matters diverted the attention of Government until 1828, when Major Sim was instructed to undertake experiments in blasting and removing the rocks. His reports will be found at length in the *Journal of the Royal Geographical Society* (vol. iv). The first scientific marine survey of the channel was conducted in 1837 by Lieutenants Powell and Ethersey of the Indian Navy, assisted by Lieutenants Grieve and Christopher. The charts made on this occasion still remain the standard authority. Operations for deepening and widening the channel were begun in 1838 and continued for many years. It is now about 80 feet wide, 14 feet deep as a minimum, and

4,232 feet in length, and is used to a large extent by coasting vessels. Navigation through it requires care, as the current is sometimes very strong.

It has now come to be recognized that, if ocean steamers are ever destined to run north of the island of Ceylon, the best route will be a ship canal across the island of Pāmban. It has been already mentioned that the Madura-Pāmban railway has been carried as far as the point on the mainland which faces Pāmban town. Proposals are now under consideration to bridge the channel and to carry the railway across it to Rāmeswaram; to cut a canal through Pāmban Island large enough to take sea-going ships; to establish a ship-basin in one part of this canal and connect it with the railway; and eventually to continue the railway across Adam's Bridge to Ceylon. Details of these schemes have not yet been worked out; but it is anticipated that the completion of the first part of them would result in the creation of a port on the island which would attract much shipping, since the new route would afford a much shorter passage between the southern extremity of the Indian Peninsula and the ports along the north-east coast than the present voyage round Ceylon. Pāmban Island would form a natural breakwater which would enable large ships to anchor in still water during either monsoon—to the north when the south-west wind was blowing and to the south during the north-east current. There is a depth of 6 fathoms close to the shore of the island on both the north and the south.

Pāmidi.—Town in the Gooty *tāluk* of Anantapur District, Madras, situated in 14° 57′ N. and 77° 36′ E., 14 miles south of Gooty town, on the north bank of the Penner river. Population (1901), 10,657. The town is unhealthy, as its situation is low and the neighbourhood is covered with 'wet crops' irrigated from the river. There is a large colony of Marāthā cotton-printers here; and Pāmidi chintzes are well-known throughout the Ceded Districts, and are exported in large quantities to other parts of the peninsula and to Burma. The printers are Rangāris by caste; and their handiwork, if coarse in execution, is most effective, owing to the boldness of its design and the richness of the deep-red colour (a vegetable dye) which is the foundation of almost all the patterns.

Pamsanngut.—Petty State in the Khāsi Hills, Eastern Bengal and Assam. The population in 1901 was 288, and the gross revenue in 1903-4 was Rs. 50. The principal products are potatoes and millet.

Panātīrtha.—Name for the upper course of the JĀDUKĀTA river in Eastern Bengal and Assam.

Panchāla.—An ancient kingdom of Northern India, forming the centre of the MADHYA-DESA or 'middle country.' There were two

divisions: Northern Panchāla, with its capital at AHĪCHHATTRA or Adikshetra, in Bareilly; and Southern Panchāla, with its capital at KAMPIL, in Farrukhābād. They were divided by the Ganges, and together reached from the Himālayas to the Chambal. In the Mahābhārata we find the Pāndava brothers, after leaving Hastināpur (in Meerut District) and wandering in the jungles, coming to the tournament at the court of Drupada, king of Panchāla, the prize for which was the hand of his daughter, Draupadī. The scene of the contest is still pointed out west of Kampil, and a common flower in the village lanes bears the name of *draupadī*. In the second century B.C. Northern Panchāla appears to have been a kingdom of some importance, for coins of about a dozen kings inscribed in characters of that period are found in various parts of it, but not elsewhere. It has been conjectured that these were the Sunga kings who, according to the Purānas, reigned after the Mauryas; but only a single name, Agni Mitra, is found both in the Purānic lists and on the coins, though many others are compounds with Mitra ('friend'). The coins point to an absence of Buddhistic tendencies. Varāha Mihira, the Sanskrit geographer of the sixth century A.D., mentions a people, the Panchālas, who evidently inhabited the region described above.

[Lassen, *Ind. Alt.*, vol. i, p. 598; Cunningham, *Coins of Ancient India*, p. 79; Fleet, *Ind. Ant.*, 1893, p. 170.]

Panchānnagrām.—Government estate in the District of the Twenty-four Parganas, Bengal. It comprises the suburbs of Calcutta, and is so named from the 55 villages which the estate originally comprised; these were in 1757, according to Holwell, 'taken from the Twenty-four Parganas adjoining to Calcutta in order to extend its bounds.' The area is 26 square miles, and the land revenue demand in 1903–4 was Rs. 1,07,000. A portion of the estate pays a fixed rate of Rs. 3 per *bīgha* (about one-third of an acre), and in the remainder rates fluctuate according to the position and advantages of the land. A list of the 55 villages originally included in the estate will be found on pp. 53 and 54, Part I of the *Calcutta Census Report*, 1901.

Pānchāvada.—Petty State in KĀTHIĀWĀR, Bombay.

Pānchet.—Hill in the head-quarters subdivision of Mānbhūm District, Bengal, situated in 23° 37′ N. and 86° 47′ E., half-way between Raghunāthpur and the junction of the Barākar and Dāmodar rivers. It is 3 miles long, stretching from north to south in a long rounded ridge, and has a height of 1,600 feet above sea-level. A fort containing the ruins of many temples, tanks, &c., was once the main seat of the Rājā of Pānchet. A large gathering takes place annually at a temple on the side of the hill.

Pānchgani.—Health resort in the Wai *tāluka* of Sātāra District, Bombay, situated in 17° 55 N. and 74° 48′ E., on the Surul-Mahā-

baleshwar road, 4,378 feet above sea-level, about 10 miles west of Wai and 11 miles east of Mahābaleshwar. Population (1901), 1,312. The village lies with five others on a spur of the Western Ghāts, which juts out at Mahābaleshwar and terminates about a mile from Wai. Situated to the lee of Mahābaleshwar and about 200 feet lower, it escapes the heavy rain and mist of the outer range, which are carried away into the valleys to the north and south. It is also happily shielded from the east wind, by being built under a large extent of table-land. The magnificent scenery of the Kistna valley, extending for many miles from east to west, with its numerous hamlets, highly cultivated fields, and picturesque river, can be seen along the whole northern ridge of the mountain. Though less extensive, the southern aspect is even more beautiful.

Considered as a sanitarium, Pānchgani stands almost unrivalled. With a temperature like that of Mahābaleshwar, it has the advantage over that charming health resort of being comfortably habitable throughout the year. The climate is cool, salubrious, and comparatively dry. The annual rainfall averages 56 inches, or about a fifth of that of Mahābaleshwar. The temperature varies from 55° at 6 a.m. in December to 96° at 2 p.m. in March. The mean temperature at noon is 71° and the mean daily range only 6°. The European settlement was founded by private enterprise, chiefly through the energy and zeal of the late Mr. John Chesson, who, in 1854, began farming here on a small scale. By 1862 there were six substantial houses built by Europeans, and a yearly grant of Rs. 2,000 was made to the station by Government in that year.

The station is managed by a Superintendent with magisterial powers, and has, besides his office, a market, an unaided high school for European and Eurasian boys, two aided schools for European and Eurasian girls, and a dispensary. The high school, which is managed by a committee in connexion with the Diocesan Board of Education, was originally opened in 1876, and reopened in 1880 by the Bishop of Bombay. This school is the only one of its sort permanently located in the Western Ghāts for European boarders. Nurseries are attached to the station, where experiments have been made in planting exotic and other trees and shrubs and in cultivating English potatoes, which, with the peach, the pear, and the blackberry, thrive in the mild climate. The coffee of Pānchgaṇi has been favourably reported on by London brokers. Here, too, the heliotrope and myrtle grow in wild profusion. The sweet-brier, so rarely met with in India, flowers; and the eye of the traveller from the dusty plains below is gladdened with the sight of lanes bordered with festoons of hedge-roses and honeysuckle. Pānchgani, always beautiful, is at its best in August and September, when the fairy pimpernel, the buttercup, and the wild sweet-pea cover

the hill-side, while the springy turf of the table-lands is thickly carpeted with the velvety blue-bonnet and the more delicate star-grass.

Pānch Mahāls (or 'Five Subdivisions').—District in the Northern Division of the Bombay Presidency, lying between 22° 15′ and 23° 11′ N. and 73° 22′ and 74° 29′ E., with an area of 1,606 square miles. It consists of two separate parts, divided by a broad strip of the Bāriya State of the Rewā Kāntha Agency. Of these, the western portion is bounded on the north by the States of Lūnāvāda, Sunth, and Sanjeli; on the east by Bāriya State; on the south by Baroda State; and on the west by Baroda State, the Pāndu Mehwās, and the Mahī river, which separates it from Kaira District. The eastern portion is bounded on the north by the States of Chilkāri and Kushālgarh; on the east by Western Mālwā and the river Anās; on the south by Western Mālwā; and on the west by the States of Sunth, Sanjeli, and Bāriya.

Physical aspects.

The two sections of the District differ considerably in appearance. That to the south-west (except a hilly area covered with dense forest, comprising the Pāvāgarh hill) is a level tract of rich soil; while the other portion is much more rugged and includes many varieties of soil, from fertile twice-cropped valleys to barren stony hills. In some of the western villages, the careful tillage, the well-grown trees, and the deep sandy lanes bordered by high hedges overgrown with tangled creepers recall the wealthy tracts of Kaira. In other parts are wide stretches of woodland and forest, or bare and fantastic ridges of hills without a sign of tillage or population.

Though there are many streams and watercourses, the District has no large river, except the Mahī, which touches it on the north-west. The Anās and Pānam occasionally dry up in the hot season. The District is, however, sufficiently supplied with water. The Orwāda lake near the Pānam river is said never to have been dry, and to have a pillar in the centre visible only in times of extreme drought.

PĀVĀGARH in the south-west corner of the District is the only mountain of any size. It rises 2,500 feet from the plain in almost sheer precipices, and has a rugged and picturesque outline on the summit, which is strongly fortified, and was formerly a place of much consequence.

Except in its south-west corner, no detailed inquiry into the geology of the Pānch Mahāls has been made. In the eastern division, though black and clay soils occur, the surface is chiefly a somewhat shallow light-red soil much mixed with gravel. The rocks are believed to be mainly metamorphic with a few trap outliers. In the western division, near Godhra, all the surface rocks are metamorphic, and in other places metamorphic rocks alternate with beds of quartzite sandstone. The

geological survey of the south-west of the District shows two chief geological features: the great volcanic mass of Pāvāgarh, and a group of semi-metamorphic beds, chiefly quartzite or quartzite sandstone, known as the Chāmpāner beds. Pāvāgarh is an isolated outlier of the Deccan trap, all that remains of a range of basaltic lavas and ash-beds that stretched south to the Rājpīpla hills. Unlike those to the south-east, the Pāvāgarh traps lie perfectly flat. Their mineral character is in many parts peculiar. Of the numerous terraces below the upper flat of the hill, some are ordinary basaltic lava-flows; but many are of a light purple clay-rock rare in other places. Somewhat cherty in appearance and containing small crystals of glassy felspar, this rock is sometimes mottled purple and grey. It is almost always distinctly marked by planes of lamination parallel to the stratification, sometimes so finely as to be more like an ordinary shale than a volcanic rock. Similar beds are very rare in the Deccan trap, and no other instance of their development on so large a scale has been observed in Western India. The group of quartzite sandstone beds has been traced for about 20 miles east of Pāvāgarh and for 7 or 8 miles south of Chāmpāner. The other beds are mostly slates, conglomerates, and limestones, ferruginous bands occasionally occurring. There are hot springs 10 miles west of Godhra at Tuva, where Kolīs and Bhīls assemble in March to worship Mahādeo.

The most prominent trees of the District are the mango, *mahuā*, tamarind, *rāyan* (*Mimusops hexandra*), and banyan, which give the country a park-like appearance. In addition to the banyan or *vad* (*Ficus bengalensis*), other members of the fig family are met with, such as the *pipri* (*Ficus Tsiela*), the *umbar* or *gular* (*F. glomerata*), and the *pīpal* (*F. religiosa*). In the Kālol *tāluka* rows of palmyra palms, many of them encircled by a *pīpal*, at once attract notice. Teak and *khākra* (*Butea frondosa*) are common. The gum of the latter is gathered by the Naikdas, who manufacture rope from its roots. Among other common trees are the *samra* (*Prosopis spicigera*), *karanj* (*Pongamia glabra*), *bor* (*Zizyphus Jujuba*), *aduso* (*Ailanthus excelsa*), *simal* (*Bombax malabaricum*), and *shamla* (*Eriodendron anfractuosum*). The commonest shrubs are the *onkla* (*Alangium Lamarckii*), and the *sitāphal* or custard-apple (*Anona squamosa*). Of climbing shrubs, the *kavaj* (*Mucunna pruriens*), *gavria* (*Canavalia ensiformis*), and *Ipomoea sepiaria* with its pale pink flowers are of frequent occurrence. The lotus is found in the marshes. Among *Labiatae* and *Amarantaceae* the most noticeable are *Leucas linifolia*, *L. Cephalotes*, *Celosia argentea*, and *Achyranthes aspera*. The milk-bush (*Euphorbia Tirucalli*) and prickly-pear (*Opuntia nigricans*) are common in hedges.

When in 1861 the District was taken over by the British Government, big game of all sorts and many kinds of deer abounded. Wild

elephants were common three centuries ago, and fifty years back tigers were numerous. The number is now greatly reduced. Snakes are common throughout the District, especially in and near Godhra.

In healthiness the climate varies greatly. The well-tilled parts, Kālol in the west and Dohad in the east, would seem to be free from any special form of sickness, and to be healthy for new-comers as well as for the local population. Godhra, surrounded by large areas of forest and waste, though fairly healthy for residents, is a trying climate for strangers. The hot and rainy seasons have a depressing effect on Europeans. The mean temperature is 83°.

In the eastern division the rains are late in their arrival. Hālol *petha* has the heaviest average fall (41 inches); the lowest is in Dohad (30). The average rainfall at Godhra town is 38 inches, mainly received during the south-west monsoon. The rainfall is generally heavier than in other Gujarāt Districts, owing to the proximity of the Rājpīpla hills.

History.

The history of the Pānch Mahāls is the history of the city of CHĀMPĀNER, now a heap of ruins. During the Hindu period Chāmpāner, founded about the end of the eighth century, was a stronghold of the Anhilvāda kings and of the Tuār dynasty. The Chauhāns followed the Tuārs, and retained possession of it and of the surrounding country until the appearance of the Muhammadans under Mahmūd Begara in 1484. From this time until 1536 Chāmpāner remained the political capital of Gujarāt. In 1535 Humāyūn pillaged the city, and in the following year the court and capital were transferred to Ahmadābād. The Marāthās under Sindhia overran and annexed the District in the middle of the eighteenth century; and it was not until 1853 that the administration was transferred to the British. In 1861 ownership was also transferred, and Sindhia received compensation for the Pānch Mahāls in lands near Jhānsi. At this date the District was placed under the Political Agent for Rewā Kāntha. In 1864 the revenue was made payable through Kaira; and in 1877 the Pānch Mahāls were formed into a distinct Collectorate. Since 1853 the peace has been twice disturbed—once in 1858 by an inroad of mutineers, under Tāntiā Topī; and a second time in 1868, when the Naikdās (said to be the Muhammadan descendants of the population of Chāmpāner) rose, but were dispersed by Captain Macleod and a detachment of the Poona Horse. The chief criminal, Joria, was hanged.

There are few remains of archaeological interest in the District. On the hill of Pāvāgarh are the ruins of the Sāt Mahal or 'seven-storeyed palace,' from which the ladies of the *zanāna* used to witness the pleasures of the chase; the Māchi Haveli or 'terrace palace,' Makai Kothār or 'maize storehouse,' and the Navlākh Kothār or 'nine-lakh

granaries.' The summit is occupied by a famous shrine of Kālika Māta; and there are some mediaeval temples on the hill. The Jāma Masjid of Chāmpāner is known for its massive grandeur and perfect finish (1414), and some finely decorated mosques and tombs are buried in the adjacent jungle.

Population.

The District contains 4 towns and 689 villages. At the last four enumerations the population was: (1872) 240,743, (1881) 255,479, (1891) 313,417, and (1901) 261,020. The decrease in 1901 was due to the famine of 1900, which pressed with great severity on Bhīls and other wild tribes of the District. The three principal towns in the District are: GODHRA, the head-quarters, DOHAD, and JHĀLOD. The *tāluka* areas and population are as follows:—

Tālukas.	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Dohad	607	1	114	58,887	150	- 14	3,096
,, Jhālod *petha*		1	98	31,931		- 35	1,307
Godhra	585	1	225	96,406	165	- 10	5,680
Kālol	414	1	80	39,964	178	- 15	3,255
,, Hālol *petha*		...	172	33,832		- 17	1,482
District total	1,606	4	689	261,020	163	- 17	14,820

Of the total population, 210,521, or 80 per cent., are Hindus, and 21,349, or 5 per cent., Muhammadans. Gujarātī is spoken by 97 per cent. of the inhabitants.

Among the Hindus the most numerous castes are Kolīs (49,000) and Patelias (10,000). The majority of the aboriginal tribes are Bhīls, who number 98,000, or 37 per cent. of the total population; other aborigines number 8,000, nearly all Naikdās. Until recent years the aboriginal tribes were turbulent, and much addicted to thieving and drunkenness. The Bhīls, as a rule, now cultivate the same fields continuously, although many still practise nomadic tillage on patches of forest land, which they abandon after a year or two. Formerly, they never entered a town except to plunder, but now they crowd the streets, selling grain, wood, and grass. The Naikdās are found only in the wildest parts, chiefly in Hālol, and are employed as labourers and woodcutters; a few practise nomadic tillage. The Bhīls and Naikdās do not live in villages, but each family has a separate dwelling; and they are still prone to move from place to place for superstitious reasons. The agricultural population of the District is being steadily strengthened by an immigration of Kunbīs from neighbouring tracts. These now amount to 2·4 per cent. of the whole, and are chiefly found in the

western portion. The Muhammadan population consists largely of the trading Bohrās and a caste of oilmen known as Ghānchis (7,000). These men, as their name implies, are generally oil-pressers; but in former times they were chiefly employed as carriers of merchandise between Mālwā and the coast. The changes that have followed the introduction of railways have in some respects reduced the prosperity of these professional carriers, and the Ghānchis complain that their trade is gone. Much of the best cultivated land in the neighbourhood of Godhra and Dohad is in their hands; and, though turbulent on occasions, they are, as a class, so intelligent, pushing, and thrifty, that there seems little reason to doubt that before long they will be able to take advantage of some opening for profitable employment.

The District is an agricultural one, more than 71 per cent. of the people depending on the land. Of the rest, 11 per cent. are supported by industries and 9 per cent. by general labour. Trade is in the hands of the Baniās (7,000) and Bohrās (5,000), the latter monopolizing the very considerable timber business. The Baniās are well represented in all villages of any size.

In 1872 there were only 24 Christians, representing European officers and their servants. According to the Census of 1901 there were 489 native Christians, mostly in the Dohad *tāluka* (329); and 17 Europeans and Eurasians. The Irish Presbyterian Mission has stations at Dohad and Jhālod, and the American Methodist-Episcopal Mission works at Godhra. The Salvation Army has been working in Dohad and Jhālod since 1890. The Irish Presbyterian Mission maintains altogether 9 schools, of which 4 in Jhālod are for Bhīls, 4 orphanages, and 2 agricultural settlements at Dohad and Rājespur, on which the boys of the schools are settled after two years' training. The American Mission maintains a girls' school and 10 village schools. Marriages according to Christian rites have been solemnized between 19 couples of Bhīl converts.

Agriculture.

The soil of the District differs considerably from that of Western Gujarāt. There are great varieties of soil: alluvial in the north-west of Godhra; *māl*, a dull black soil, to the south of Godhra; and beyond that a large tract of light *gorādu* land. The soil of the eastern division is both light and black, and, owing to the abundance of water, is very productive. An area of about 40,000 acres is capable of bearing two crops—maize followed by gram or wheat—without irrigation.

The tenures of the District are *ryotwāri* (41 per cent.), *tālukdāri* (25 per cent.), *mehwāsi* (6 per cent.), and leasehold (9 per cent). About 18 per cent. consists of *inām* and *jāgīr* estates. The chief statistics of cultivation in 1903-4 are shown in the following table, in square miles:—

Tāluka.	Total area.	Cultivated.	Irrigated.	Cultivable waste.	Forests.
Dohad	607	341	$1\frac{3}{4}$	101	114
Godhra	585	330	1	67	139
Kālol	414	260	$\frac{1}{4}$	32	78
Total	1,606*	931	3	200	331

* The area for which statistics are not available is 210 acres.

Maize is the staple food-crop of the District (161 square miles), and is especially important in the Dohad *tāluka*. Next in importance is *bājra* (81), grown chiefly in Kālol and Godhra. The other crops largely cultivated are rice (67), gram (63), and sesamum (65). Gram is mainly produced in Dohad and Godhra. Rice is of inferior quality. *Tur* and castor are also grown, as well as small quantities of sugar-cane in Godhra and Kālol, and *til* (sesamum) is sown in partly cleared or new fields. Since 1902 cotton has been raised in Kālol and Hālol. During the decade ending 1903-4, 9·5 lakhs was advanced to cultivators for improvement of land and the purchase of seed and cattle, of which 4·6 lakhs was lent in 1900-1 and nearly 2 lakhs in 1901-2.

Little care is taken in breeding cattle. The bullocks are poor, small, and weak, but hardy and active, and can work on the poorest fare. Horses are small and poor, the result of careless breeding and bad keep. Goats are fairly plentiful. Sheep are few and are confined to Dohad; they are of poor breed.

The fields are watered from rivers, tanks, and wells, the total area irrigated in 1903-4 being 3 square miles. Wells supplied 1,660 acres, tanks 125, Government canal 12, and other sources 3 acres. There are altogether 2,582 wells, 3 tanks, and one Government work, the Muvalia tank. From rivers water is drawn by means of rough wooden lever-lifts (*dhekudis*), costing about Rs. 3 to set up. As springs are found close to the surface, wells are seldom sunk deeper than from 15 to 30 feet.

The Pānch Mahāls form the only District in Gujarāt with a large forest area. Till 1860 the produce of these forests was in little demand, and much damage had been done to them by previous neglect. There remains in consequence little timber of any size. In 1866 the construction of the Bombay, Baroda, and Central India Railway raised the value of timber. Efforts were then made to introduce a more efficient system of management. The District possesses 331 square miles of forest, and the forest revenue amounted in 1903-4 to $1\frac{1}{2}$ lakhs. The timber and firewood are chiefly exported, about 40 per cent. of the former and 20 per cent. of the latter being consumed locally. Except the flowers of the *mahuā*, the minor produce is of little consequence. The flowers are gathered for export, while the tree also supplies food and drink to the Bhīls, and furnishes excellent timber. The *rayan*

grows in beautiful clusters, and its fruit forms the chief food of the poorest classes.

Minerals.

Compared with other Gujarāt Districts the Pānch Mahāls are rich in minerals. The hills contain iron, lead, manganese, and mica. Iron ore is found in the village of Pālanpur in the Hālol *tāluka* and near Jāmbughoda and Shivrājpur in Hālol, but is not worked. Mining for manganese on a large scale is now being carried on in Hālol by a European firm. Lead ore occurs in Nārukot, but is too poor in silver to repay the cost of working. Talc is quarried near the Nārukot hills. A useful sandstone for paving is found at Bājarwāda, and the common Godhra granite, a very durable stone, is worked 9 miles from Pālī station.

Trade and communications.

The through trade of the District was once very flourishing, especially after the reduction of transit duties; but the opening of the Mālwā line of the Rājputāna-Mālwā State Railway into Central India from Khandwā interfered for a time with this traffic. The recently constructed railway from Godhra to Ratlām has now revived it. The chief exports to Gujarāt are grain, *mahuā* flowers, timber, and oilseeds; the chief imports from Gujarāt are tobacco, salt, coco-nuts, hardware, and piece-goods. Timber is the chief article of export, and most of it comes from the Bāriya and Sanjeli forests. The only industry of any importance is the making of lac bracelets at Dohad. Dohad is also looked upon as a granary in time of necessity for Mālwā, Mewār, and Gujarāt.

The Anand-Godhra branch of the Bombay, Baroda, and Central India Railway and the Godhra-Ratlām-Nagda Railway pass through the District from west to east, connecting Godhra with Anand on the west and Dohad on the east. The former traverses the District for 15 miles, the latter for 39 miles. A chord-line from Baroda to Godhra, which was opened in 1904, traverses the District for 17 miles. There are four main roads, one connecting Lūnāvāda with Godhra, while another runs from the railway at Sunth Road to the Sunth border. The old road running parallel to the railway line from Anand to Dohad is still maintained where it passes through this District, and a branch of it, metalled and bridged, connects Jhālod with the railway at Limkheda in Bāriya. There is a bridged but unmetalled road from Godhra to Kālol and Hālol, and thence across to the Jāmbughoda frontier. A metalled road from Limbdi through Dohad to the Alirājpur frontier has recently been completed. The total length of roads in the District in 1903-4 was: metalled, 82 miles; unmetalled, 68 miles. Of the former, 45 miles of Provincial roads and 37 miles of local roads are maintained by the Public Works department. Avenues of trees are planted along 38 miles.

In 1845 the maize crop was destroyed by locusts. During the twenty

years ending 1879 want of rain caused scarcity and distress on five occasions, 1853, 1857, 1861, 1864, and 1877. The District again suffered in 1899. Relief works were opened in September, 1899, and continued till October, 1902. The highest daily average relieved was: on works, 71,204 (July, 1900); and gratuitously, 75,188 (August). It is calculated that nearly 300 persons and over 200,000 cattle died from privation in 1899-1902. The cost of relief measures in this and the adjacent District of Kaira was 88 lakhs. Remissions of land revenue amounting to over 35 lakhs were granted in the two Districts. Advances to agriculturists amounted to 8½ lakhs in the Pānch Mahāls alone.

Famine.

In the Godhra and Kālol *tālukas* crops are occasionally injured by mildew, insects, or frost; and in 1903-4 the early crops suffered severely from locusts.

Administration.

For purposes of administration the Pānch Mahāls form a non-regulation District under the charge of an officer styled the Collector, who is also Political Agent, Rewā Kāntha. The District is divided into two divisions, in charge of an Assistant and a Deputy-Collector respectively. There are three *tālukas*, DOHAD, GODHRA, and KĀLOL, and two *pethas* or petty subdivisions, Jhālod and Hālol.

For civil judicial purposes the District is included in the jurisdiction of the Judge of Ahmadābād, while since 1905 it has been part of the Broach Sessions Division. There are two Sub-Judges for civil work, at Dohad and Godhra, and eight officers to administer criminal justice. The commonest forms of crime are theft of cattle and house-breaking, in both of which the aboriginal tribes are proficient.

Before the management of the District was taken over by the British, the chief revenue contractor recovered the revenue under several systems. Villages in the hands of large landholders paid a lump sum fixed on an estimate of their probable revenue. Others were represented by their headmen, who were responsible for an amount fixed on a rough estimate of what the village could afford to pay. Some villages were leased in groups to sub-contractors on five-year leases, with yearly increasing rents. In other cases the division of crops and levy of a plough cess fixed by the revenue superintendent, or *desai*, varied according to the caste of the cultivator from Rs. 2 to Rs. 15 a plough, or, at the rate of 7 acres to a plough, from 4 annas to Rs. 2 an acre. When spice, sugar-cane, and other rich crops were grown, an extra cess was levied. In villages where a division of crops was in force the Government share varied from a third to a half. When the British took over the management in 1853, the Government respected the position of the large landlords, *tālukdārs*, and *thākurs*, who were chiefly Kolis owning estates varying from one village to forty or fifty. These

villages were valued, and a certain proportion of the full assessment was fixed as the rent for a period of years. The alienations of Government villages were inquired into and settled on an equitable basis. The transit duties and other vexatious levies of the former government were abolished. On the transfer of the Pānch Mahāls from Sindhia in 1861, they were in the first instance placed under the Political Agent for Rewā Kāntha. In the same year the survey settlement of Hālol, Dohad, and Jhālod was carried out, to be followed in 1870 by the survey settlement of Godhra and Kālol. A resettlement of the District has been in progress since 1903. The original survey found that the cultivated area was 1·4 per cent. in excess of that recorded, and the settlement enhanced the total revenue from 1·87 to 2·02 lakhs. The present average assessment per acre of 'dry' land is R. 0–10–5 (maximum Rs. 2, minimum R. 0–14); of rice land, Rs. 2–3 (maximum Rs. 2–8, minimum R. 1); and of garden land, Rs. 2–12 (maximum Rs. 4–7, minimum Rs. 1–9).

Collections of land revenue and total revenue, which are still paid through Kaira, have been as follows, in thousands of rupees:—

	1890-1.	1900-1.	1903-4.
Land revenue . .	2,84	95	2,75
Total revenue . .	3,10	1,04	3,04

Outside the municipalities of GODHRA and DOHAD, local affairs are managed by the District board and the three *tāluka* boards of Godhra, Kālol, and Dohad. The Local funds yielded in 1903–4 a revenue of Rs. 58,000, and the expenditure amounted to Rs. 68,000, of which about Rs. 15,000 was spent on roads and buildings and Rs. 6,000 on water-works. The chief source of income is the land cess.

The District Superintendent has the control of the police administration, assisted by 2 inspectors and 7 chief constables. There are 5 police stations. The force in 1904 numbered 504 men, working under 118 head constables, besides 8 mounted police under 2 *daffadārs*. There are 5 subsidiary jails and 3 lock-ups in the District, with accommodation for 73 prisoners. The daily average prison population in 1904 was 43.

The Pānch Mahāls stand eighth among the Districts of the Presidency in the literacy of their population, of whom 5·7 per cent. (10·5 males and 0·8 females) were able to read and write in 1901. In 1855–6 there were only 7 schools attended by 327 pupils; by 1881 the number of schools had risen to 39 and of pupils to 2,794. In 1890–1 there were 6,499 pupils, and in 1900–1, 5,902. Private and public schools in 1903–4 numbered 124, attended by 5,628 pupils, including 1,071 girls. Of the 112 public institutions, one is managed by the

Educational department, 96 by local boards, and 12 by municipalities, while three are unaided. These institutions include a high and middle school and 111 primary schools. The total expenditure on education in 1903-4 was Rs. 48,000, of which Rs. 5,000 was derived from fees. Of the total, 83 per cent. was devoted to primary schools.

In 1904 the District possessed 1 hospital and 5 dispensaries. The Dohad civil hospital, established in 1870, was transferred to Godhra many years ago. These institutions contain accommodation for 69 in-patients. The total treated in 1904 numbered 36,000, including 702 in-patients. The expenditure was Rs. 10,000, of which Rs. 2,800 was met from Local and Rs. 500 from municipal funds.

The number of persons successfully vaccinated in 1903-4 was 8,522, representing a proportion of 33 per 1,000, which is much above the average for the Presidency.

[Sir J. M. Campbell, *Bombay Gazetteer*, vol. iii (Kaira and Pānch Mahāls) (1879).]

Pandare.—Village in the Bhīmthadi *tāluka* of Poona District, Bombay, situated in 18° 8′ N. and 74° 31′ E. Population (1901), 5,254. The Nīra Canal runs through the village, which is noted both for its sugar-cane industry, employing 2,000 labourers and yielding annually about 5 lakhs, and also for its stone, which is especially adapted for engraving. It contains one school with 80 boys.

Pāndavgarh (or Pāndu Fort).—Fort in the Wai *tāluka* of Sātāra District, Bombay, situated in 18° N. and 73° 45′ E., 4,177 feet above sea-level, 4 miles north-west of Wai. The fort is said to have been built by the Kolhāpur Silāhāra chief, Bhoj II (1178-93) of Panhāla. About 1648 it is mentioned as being in the charge of a Bijāpur *Mokāsdār* stationed at Wai. In 1673 it was taken by Sivajī. In 1701 Pāndavgarh surrendered with Chandan Vandan to Aurangzeb's officers. In 1713 Bālājī Viswanāth, afterwards the first Peshwā, though closely pursued by Chandrasen Jādhav, the Marāthā general or *Senāpati*, managed to reach Pāndavgarh. He was besieged here for a time by Chandrasen Jādhav's troops, who were withdrawn when Rājā Sāhū ordered an advance on Sātāra. During Trimbakjī Denglia's insurrection in 1817, Pāndavgarh was taken by the insurgents. It surrendered in April, 1818, to a detachment of the 9th Native Infantry Regiment under Major Thatcher. There are a few rock-cut caves at Pāndavgarh, situated on a small south-east projection of the fort within the limits of Dhāvdi village.

Pandharpur Tāluka.—*Tāluka* of Sholāpur District, Bombay, lying between 17° 29′ and 17° 56′ N. and 75° 6′ and 75° 31′ E., with an area of 478 square miles. There are two towns, PANDHARPUR (population, 32,405), the head-quarters, and KARKAMB (5,571); and 83 villages. The population in 1901 was 91,928, compared with 91,261 in 1891.

The density, 192 persons per square mile, is above the District average. The demand for land revenue in 1903–4 was 1·5 lakhs, and for cesses Rs. 10,000. Pandharpur is an open waving plain, almost bare of trees. The chief rivers are the Bhīma and the Mān. Along the river banks the soil is mostly deep black, and to the east of the Bhīma it is especially rich. On the high-lying land the soil is shallow, black and grey, gravelly or *barad*. The climate is dry, and the rainfall scanty and uncertain.

Pandharpur Town.—Head-quarters of the *tāluka* of the same name in Sholāpur District, Bombay, situated in 17° 41′ N. and 75° 26′ E., on the right or south bank of the Bhīma river, 31 miles from Bārsi Road station on the Great Indian Peninsula Railway, with which it was connected in 1906 by an extension of the Bārsi Light Railway. Population (1901), 32,405. Hindus number 30,658; Muhammadans, 1,217; Jains, 514. Pandharpur is one of the most-frequented places of pilgrimage in the Bombay Presidency.

The best view of the town is from the opposite bank of the Bhīma. When the river is full, the broad, winding stream, gay with boats; the islet temples of Vishnupad and Nārad; the rows of domed and spired tombs on the farther bank; the crowded flight of steps leading from the water; the shady banks, and among the tree-tops the spires and pinnacles of many large temples, combine to form a scene of much beauty and life. The débris of former buildings have somewhat raised the level of the centre of the town. In that part the houses are comparatively well built, many of them being two or more storeys high, with plinths of hewn stone. Pandharpur is highly revered by Brāhmans as containing a celebrated temple dedicated to the god Vithoba, an incarnation of Vishnu. Vithoba's temple is near the centre of that part of the town which is considered holy, and is called Pandharikshetra, or 'the holy spot of Pandhari.' It has a length from east to west of 350 feet, and a breadth from north to south of 170 feet. In honour of this god three fairs are held annually. At the first of these, in April, the attendance varies from 20,000 to 30,000 persons; at the second, in July, from 100,000 to 150,000; and at the third, in November, from 40,000 to 50,000. Every month, also, four days before the full moon, from 5,000 to 10,000 devotees assemble here. Since 1865 a tax of 4 annas per head has been levied on pilgrims at each of the three great fairs. The town was constituted a municipality in 1855, and had an average income during the decade ending 1901 of Rs. 67,400. In 1903–4 the income was Rs. 88,200, of which the pilgrim tax contributed Rs. 50,000. The town is well supplied with water from a reservoir, about a mile south-west of the town, which was built by the municipality in 1874 at a cost of 2 lakhs. The Bhīma has eleven *ghāts* or landings.

Besides these, several stone pavements slope to the river. Pandharpur contains a Subordinate Judge's court, six schools, including a high school, an industrial school, and a school for girls, and one dispensary. It is a station of the Indian Village Mission. During the famine of 1876–8 numbers of children were left to die by their starving parents; while the famine lasted, the children were fed in the Gopālpur relief house. When the relief house was closed, an orphanage, the only institution of its kind in the Bombay Presidency, was established from subscriptions, and the foundation stone was laid on October 10, 1878. In connexion with the orphanage a foundling home was established from Rs. 10,000 subscribed in Bombay, to which a school of industry was added in November, 1881.

In 1659 the Bijāpur general Afzal Khān encamped at Pandharpur on his way from Bijāpur to Wai in Sātāra. In 1774 Pandharpur was the scene of an engagement between Raghunāth Rao Peshwā and Trimbak Rao Māma, sent by the Poona ministers to oppose him. In 1817 an indecisive action was fought near Pandharpur between the Peshwā's horse and the British troops under General Smith, who was accompanied by Mr. Elphinstone. In 1847 the noted dacoit Rāghujī Bhāngrya was caught at Pandharpur by Lieutenant (afterwards General) Gell. During 1857 the office and the treasury of the *māmlatdār* were attacked by rebels, but successfully held by the police. In 1879 Vāsudeo Balwant Phadke, a notorious dacoit leader, was captured on his way to Pandharpur.

Pandharpur has a large annual export trade, valued at about Rs. 3,60,000, in *buka* (sweet-smelling powder), gram, pulse, incense sticks, safflower oil, *kumku* (red powder), maize, parched rice, and snuff.

[For a full account of Pandharpur, its temples, *ghāts*, and objects of interest, ancient and modern, see the *Gazetteer of Bombay*, vol. xx, pp. 415–85 (1884).]

Pāndhurnā.—Town in the Sausar *tahsīl* of Chhindwāra District, Central Provinces, situated in 21° 36′ N. and 78° 32′ E., on the Jām river, 54 miles south-west of Chhindwāra town, on the road from Betūl to Nāgpur. Population (1901), 8,904. A curious local custom may be noted. On the night of the Polā festival the *kotwār* or village watchman plants a *palās*-tree (*Butea frondosa*) in the bed of the Jām river. Next day the people of Pāndhurnā contend with those of the adjoining village of Sawargaon for the possession of the tree. Stones are thrown and wounds are frequently inflicted. But in the end the Pāndhurnā people must always get the tree or some calamity will occur during the year. Pāndhurnā was created a municipality in 1867. The municipal receipts during the decade ending 1901 averaged Rs. 3,000. In 1903–4 the income was Rs. 4,000, principally derived from a house tax. Two cotton-ginning factories have recently been opened, and

a pressing factory is under construction. Cotton cloths are woven by hand. Pāndhurnā contains a vernacular middle school.

Pāndu.—Petty State in REWĀ KĀNTHA, Bombay.

Pandua Town (also called Paruah or Peruah).—Deserted town in Mālda District, Eastern Bengal and Assam, situated in 25° 8′ N. and 88° 10′ E., at a distance of 9 miles from Old Mālda, and about 20 miles from Gaur, in a north-easterly direction from both. It is called Hazrat Pandua, to distinguish it from another place of the same name in Hooghly District. Although less noteworthy than Gaur, it contains some remarkable specimens of early Muhammadan architecture; but these, like the ruins of Gaur, lay for a long time buried in almost impenetrable jungle, in which tigers and other wild animals had their lairs, till the recent clearances of the jungle made by new settlements of Santāl colonies. According to Sir William Hunter, Pandua was probably originally an outpost forming one of the many defences of the more ancient city of Gaur, and guarding the road from the north from the incursions of Kochs and Rājbansis. It is more likely, however, that Pandua was older than Gaur, and that it occupied the site of Paundravardhana[1], the capital of the early Hindu kingdom of that name. Traces of extensive remains of ancient date may still be seen south of the Muhammadan city of Pandua, which probably mark the site of an older town; while the numerous stones with mediaeval Hindu carvings which were used in building the Adīna Masjid were evidently stripped from Hindu temples formerly standing close by.

The fortified city of Pandua, the suburbs of which reached to Mālda town, extended within the ramparts for 6 miles[2] due north, some 4 miles to the east of the Mahānandā river, and running nearly parallel to it. Mālda town was the fortified river port south of the city at the junction of the Kālindrī and the Mahānandā, while the suburb of Rai Khān Dīghi was a similar fortified port on the Mahānandā 10 miles north of Mālda town. The port of Rai Khān Dīghi also guarded the bridge over the Mahānandā at Pīrganj on the great military road. As Pandua increased in wealth and importance, its fortifications were extended, and it was further strengthened by an outpost at Ekdāla, some 20 miles to the north within the limits of the modern District of Dinājpur.

The recorded history of Pandua dates from about 1350, when

[1] In Wilson's *Vishnu Purāna* (vol. ii, p. 170, footnote), Pundra is said to be a man of mixed caste whose business it was to boil sugar; and it is suggested that this caste, which possibly survives in the Pundāris or Puros, a caste still existing in the neighbourhood, and now chiefly employed in reeling cocoons, gave its name to the kingdom of Pundra (see the similar derivation suggested by General Cunningham for Gaur).

[2] Cunningham estimates this length as less than 4 miles.

Shams-ud-dīn Ilyās Shāh, one of the first independent kings of Bengal, is said to have transferred his capital temporarily from Gaur to Pandua. It has been supposed that this king and his successors, who with difficulty repelled the Delhi emperor, were influenced in their desertion of Gaur by a strategic reason, as Pandua was not accessible by water, and was probably then as now protected by almost impenetrable jungles. However this may be, it does not appear that Gaur was entirely abandoned, as the two cities seem to have existed side by side, although Pandua continued to be the chief seat of government for about seventy years (1350–1420). Its court name was Fīrozābād, which during this period regularly makes its appearance on the coins, whereas that of Lakhnautī (Gaur) disappears. About 1420, in the reign of Jalāl-ud-dīn, the son of the Hindu Rājā Kāns, the royal residence was again transferred to Gaur; but it is probable that, though its name is not again mentioned in history, Pandua maintained its splendour for some time and was a favourite country resort of the Bengal kings.

A road paved with brick from 12 to 15 feet wide seems to have passed through the entire length of the town. From the heaps of bricks on both sides it would appear to have been a regular street lined with brick houses, of which the foundations can still be traced in many places. Near the middle is a bridge of three arches, partly constructed of stone; it is rudely built and of no great size. At the northern end of the street are evident traces of a rampart, the passage through which is called Garhduār or the 'gate of the fortress.' At the south end many foundations can be traced, which also probably belonged to a gate. Dr. Buchanan-Hamilton was of opinion that the town extended only a little way either east or west from the main street, but that a scattered suburb reached in a southerly direction as far as Mālda. Entering the town, the first buildings met with are those known as the Bais-hazārī and Chheh-hazārī, or the establishments of 22,000 and 6,000 *bīghas*. The former belonged to the famous saint Jalāl-ud-dīn Tabrīzī, who came to Bengal from Persia and died in 1244; and the latter contains the tomb of Mīr Kutb Alam and that of his father Ata-ul-hakk. This saint played an important part during the rebellion of the Hindu *zamīndār* Rājā Kāns and died in 1415. South-east of Chheh-hazārī stands the Eklākhi monument, a mausoleum erected over the tombs of Jalāl-ud-dīn Muhammad Shāh, the son of Rājā Kāns, who died about 1430, and of his wife and son. East of this is the Golden mosque, sometimes called the Kutbshāhi mosque from the name of its builder, which was constructed between 1583 and 1585.

By far the most famous, however, of all the Muhammadan remains at Gaur and Pandua is the great Adīna Masjid, which stands one mile

north of the last group of ruins. It was built by Sikandar Shāh, and completed in either 1369 or 1374, and is said to be a copy of the Jāma Masjid at Damascus. In its present state, it is a large mass of ruins, and it has been found possible to preserve only the Bādshāh kā Takht, or *zanāna* apartment, and the bays and arches around it. One mile east of the mosque are the remains of the old palace of Pandua, called the Sātaisgarh; they consist of a number of tanks with galleries and baths around them and a few ruined houses.

Government has recently taken steps for the conservation of the Adīna Masjid, the Eklākhi monument, and the Golden mosque.

[Martin (Buchanan-Hamilton), *Eastern India*, vol. ii (1838); G. H. Ravenshaw, *Gaur, its Ruins and Inscriptions* (1878); A. Cunningham, *Archaeological Survey Reports*, vol. xv, pp. 79–94 (1879); *Reports of Archaeological Surveyor, Bengal Circle* (1900–1, 1902–3, and 1903–4); and *Archaeological Survey of India, Annual Report* (1902–3), pp. 51–5.]

Pandua Village.—Village in the head-quarters subdivision of Hooghly District, Bengal, situated in 23° 5′ N. and 88° 17′ E., on the East Indian Railway and on the grand trunk road. Population (1901), 2,381. It was formerly noted for its manufacture of native paper, but the industry has disappeared. In ancient times Pandua, which is now only a small village, was the seat of a Hindu Rājā and was fortified by a wall and trench 5 miles in circumference, traces of which can still be seen. There is also a tower (120 feet high), built to commemorate a victory gained by the Muhammadans over the Hindus in 1340.

Pāndugarh.—Fort in Sātāra District, Bombay. *See* PĀNDAVGARH.

Pāndukeshwar.—Village in Garhwāl District, United Provinces, situated in 30° 38′ N. and 79° 34′ E., on the route from Srīnagar to the Mānā pass, at an elevation of 6,300 feet above sea-level. Population (1901), 298. It is said to take its name from the Pāndava brothers, who retired here to end their days in pious observances, after giving up the kingdom of Hastināpur. There is a celebrated temple of Yog-badrī, in which four or five copperplates are preserved, bearing inscriptions of the Katyūrī Rājās. A primary school has 23 pupils.

Pāndya.—One of the three kingdoms, the other two being CHERA and CHOLA, which in ancient times divided the South of India among them. Megasthenes (302 B.C.) speaks of a country called *Pandaia*; one of Asoka's inscriptions (250 B.C.) mentions the kingdom; so does Pliny (A.D. 77); and Bishop Caldwell thought that the Indian king who sent an embassy to the emperor Augustus at Rome was a Pāndya sovereign. The dynasty is thus of much antiquity. Regarding its early history there is, however, little but vague tradition. Its capital

was at MADURA, and the extensive finds of Roman copper coins in the bed of the Vaigai have been held to indicate the former existence of a Roman settlement in that neighbourhood. Kolkai ('Kolkhoi Emporium'), at the mouth of the Tāmbraparni, now quite silted up, was one of the principal ports, if not at one time the capital, of the Pāndyas. The Singhalese epic, the Mahāwansa, which was written between A. D. 459 and 477, says that a king of Ceylon married a Pāndya princess, and later on the two countries were several times at war with one another.

In the tenth century the Pāndyas were overthrown by the Cholas, and a dynasty called in the inscriptions the Chola-Pāndya line was probably established during the second half of the eleventh century. Subsequently the Pāndyas appear to have reasserted themselves, for they were in power when the Musalmāns under Malik Kāfūr swept down the Peninsula, and they shared in the downfall of the Hindu kingdoms of the South which resulted from that invasion.

Pāngal.—Hill fort in the Nāgar Karnūl *tāluk* of Mahbūbnagar District, Hyderābād State, situated in 16° 15′ N. and 78° 8′ E., south of Pāngal village, 1,800 feet above sea-level. Population of fort and village (1901), 1,227. The fort is a mile and a half long by a mile broad, having seven walls, a citadel (*bālā hisār*) in the centre, and seven towers. Two illegible inscriptions are engraved on a couple of slabs outside the fort. A battle was fought here in 1417, between the Rājās of Warangal and Vijayanagar and Fīroz Shāh Bahmani, when the latter was defeated. Sultān Muhammad Kuli Kutb Shāh gained a decisive victory at this place over the Vijayanagar Rājā in 1513. According to a Telugu inscription on the *bālā hisār*, the king's mother, with the *kiladār*, Khairāt Khān, lived in the fort in 1604. Nawāb Nizām Alī Khān of Hyderābād also resided in one of the fort buildings from 1786 to 1789.

Pāngāsi.—River of Bengal. *See* KUMĀR.

Pangmi (Burmese, *Pinhmi*).—A very small State in the Myelat division of the Southern Shan States, Burma, situated in 20° 35′ N. and 96° 42′ E., almost within the boundaries of Hsamönghkam, but touching Yawnghwe on the east, with an area of 29 square miles. The State is rather hillier than the rest of the Myelat, and is well watered, except to the east. The population in 1901 was 3,456 (distributed in 29 villages), of whom nearly 2,000 were Danus and about 1,400 Taungyos. The Ngwegunhmu resides at Legya (population, 371), not in the village of Pangmi. The revenue in 1904–5 amounted to Rs. 3,600, and the tribute to the British Government is Rs. 2,000.

Pangtara (Burmese, *Pindaya*).—State in the Myelat division of the Southern Shan States, Burma, lying between 20° 55′ and 21° 6′ N. and 96° 37′ and 96° 45′ E., with an area of 200 square miles. It is

bounded on the north by Lawksawk, on the south by Poila, on the east by Mawsön, and on the west by Yengan and Kyawkku. It consists of open rolling downs, with high hills to the west, and is exceptionally well watered by affluents of the Zawgyi. Near Pangtara (population, 1,632), the residence of the Ngwegunhmu, a considerable amount of 'wet' rice is grown. About 2,600 acres of land are under cultivation. The population in 1901 was 15,014 (distributed in 91 villages), of whom more than 11,000 were Shan-Burmans and Burmans, about 2,000 Taungthus, and the rest Danus, Palaungs, and Shans. The revenue in 1904-5 amounted to Rs. 17,500 (mainly from *thathameda*), and the tribute to the British Government is Rs. 9,500.

Panhāla.—Fort on one of the summits of the Panhāla spur of the Western Ghāts, in Kolhāpur State, Bombay, situated in 16° 48′ N. and 74° 8′ E. The Panhāla uplands are 2,772 feet above the sea and about 700 feet above the Kolhāpur plain, and the hill-top crowned by the Panhāla fort rises about 275 feet above the uplands. The fort, which is about 4½ miles in circumference, is ascribed to the Silhāra Bhoja Rājā in the eleventh century, and the small citadel on the summit bears his name. The gateways are the work of the Bahmani dynasty of the fifteenth century, and the Tīn Darwāza is a good specimen of its kind, with much tracery-work on the jambs and architrave. On the establishment of the Adil Shāhi dynasty of Bijāpur in 1489, Panhāla was fortified with great care. In 1659, immediately after the murder of Afzal Khān, Sivajī took Panhāla from Bijāpur. Thirty years later, when Sambhājī was made prisoner by Aurangzeb's general at Sangameshwar in Ratnāgiri, Panhāla came under the Mughals. In 1701 Panhāla was taken from the Mughals by Rāmchandra Pant Amātya, the ancestor of the present chief of Bāvda. In 1705 Tārā Bai, the widow of Rājā Rām, made Panhāla her head-quarters, and the seat of the Kolhāpur government was not moved from Panhāla to Kolhāpur till 1782. About 1827 Panhāla and Pāvangarh were for a time made over to the British Government. In 1844, during the minority of Sivajī IV, Panhāla and Pāvangarh were taken by rebels, who seized Colonel Ovans, the Resident of Sātāra, when on tour, and imprisoned him in Panhāla. A British force under General Delamotte was sent against the rebels, and on December 1, 1844, breached the fort wall, took it by storm, and dismantled the fortifications. A garrison of 1,845 militia and 100 pieces of ordnance were left to guard the fort. Panhāla is the head-quarters of the Panhāla subdivision, and is the best health resort in the Kolhāpur State. Opposite Sambhājī's temple is another dedicated to Jijābai Sāhib, the wife of Sambhājī Mahārāj (1712-60). The most important Musalmān building is the shrine of Sādhoba, a Muhammadan saint. It is surrounded by a wall, and is 29 feet square and, including the dome, 50 feet high. This place

is said to have been the seat of the sage Parāsar, whose name the Karvir Mahātmya associates with several objects of interest on Panhāla hill. Among these objects is a rock-cut cave of the sage to the south of the fort.

Pānīhāti.—Town in the Barrackpore subdivision of the District of the Twenty-four Parganas, Bengal, situated in 22° 42′ N. and 88° 22′ E., on the left bank of the Hooghly river. Population (1901), 11,178. Agarpāra, within the municipality, has a church, female orphanage, and school under the management of the Church Missionary Society. Pānīhāti has a considerable trade in rice. Until 1900 it was included in the South Barrackpore municipality, but in that year it was constituted a separate municipality. The income for the four years since the separation has averaged Rs. 8,600, and the expenditure Rs. 8,000. In 1903–4 the income was Rs. 10,000, half of which was obtained from a tax on persons (or property tax); and the expenditure was Rs. 9,500.

Pānīpat Tahsīl.—Southern *tahsīl* of Karnāl District, Punjab, lying between 29° 11′ and 29° 30′ N. and 76° 38′ and 77° 10′ E., on the right bank of the Jumna, with an area of 462 square miles. The population in 1901 was 196,284, compared with 184,856 in 1891. It contains the town of PĀNĪPAT (population, 26,914), the head-quarters; and 172 villages. The land revenue and cesses in 1903–4 amounted to 3·5 lakhs. On the east lie the Jumna lowlands, rich, picturesque, and unhealthy. West of the railway line the country lies at a higher level. The soil is in places saline, and considerable tracts are in consequence uncultivated, but the *tahsīl* enjoys a high degree of prosperity. The uplands are irrigated by the Western Jumna Canal.

Pānīpat Town.—Head-quarters of the *tahsīl* of the same name in Karnāl District, Punjab, situated in 29° 24′ N. and 76° 59′ E., on the Delhi-Umballa-Kālka Railway; 1,009 miles by rail from Calcutta, 1,035 from Bombay, and 916 from Karāchi. Population (1901), 26,914. The town is of high antiquity, being mentioned in the Mahābhārata as one of the five places demanded by Yudhishthira from Duryodhana as the price of peace. In Muhammadan times it would appear to have been of considerably greater importance than it is now. It was from Pānīpat that prince Humāyūn plundered Delhi in 1390, and he was defeated in the neighbourhood by Abū Bakr. Pānīpat was seven years later held for Tātār Khān and taken by Ikbāl Khān, and in the next year deserted on Tīmūr's approach. During the reign of Bahlol Lodī his son Nizām Khān, afterwards Sikandar Lodī, seized Pānīpat and made it his head-quarters. But its chief title to fame lies in that it was the scene of the three most decisive battles of Northern India: the defeat of Ibrāhīm Lodī by Bābar in 1526, the defeat by Akbar of Hīmū, the Hindu general of Adil Shāh, in 1556, and Ahmad Shāh's

victory over the Marāthās in 1761. An indecisive battle was also fought at Pānīpat between the Sikhs and the Delhi emperor in 1767. The *pargana* of Pānīpat was made over to General Perron by the Marāthās, and passed to the British in 1803. The chief monument of antiquity is the tomb of the Muhammadan saint Kalandar (also said to be buried at Karnāl), erected by the sons of Alā-ud-dīn of Ghor. Pānīpat was the head-quarters of the District until 1854. The municipality was created in 1867. The income during the ten years ending 1902–3 averaged Rs. 26,400, and the expenditure Rs. 26,200. In 1903–4 the income was Rs. 27,400, chiefly derived from octroi; and the expenditure was Rs. 28,000. Local manufactures include brass vessels, cutlery, and silvered glass; and the town has a cotton-press and a combined ginning and pressing factory. The number of operatives employed in 1904 was 500. The Muhammadan community maintains an Arabic school, and the municipality an Anglo-vernacular middle school. The town contains a dispensary.

Panjāb.—*See* PUNJAB.

Pānjalamkurichi.—Village in the *tāluk* of Ottappidāram, Tinnevelly District, Madras, situated in 8° 56′ N. and 78° 3′ E., 2 miles from Ottappidāram town. It was formerly the stronghold of Kattabomma Naik, a rebel *poligār* who gave the British much trouble at the end of the eighteenth century. The place was first taken by Colonel Fullarton in 1783. In 1799, during the first Poligār War, it was again captured by the British and the *poligār* was hanged. In 1801 it was once more a centre of disaffection, and was stormed after a most stubborn resistance. This contributed largely to the complete subjugation of the *poligārs* of the South. The fort was not only pulled down and levelled to the ground, but the very site was ploughed over and cultivated. Nothing now remains to mark the spot but a few traces of the mound erected as a breaching battery, and the enclosure in the neighbourhood containing the tombs of the officers and men of the British force who fell in the fight. A few more such tombs are also to be found near Ottappidāram.

Panjim.—Capital of Portuguese India. *See* GOA CITY.

Panjnad.—River in the Punjab, formed by the united waters of the SUTLEJ, BEĀS, RĀVI, CHENĀB, and JHELUM. Its length is 44 miles to the junction with the Indus.

Pannā State.—A *sanad* State in Central India, under the Bundelkhand Political Agency, lying between 23° 49′ and 24° 53′ N. and 79° 45′ and 81° 3′ E., with an area of 2,492 square miles. The territory is distributed over three detached tracts, situated round the towns of Pannā, Bakswāho (24° 17′ N. and 79° 19′ E.), and Bīrsinghpur (24° 46′ N. and 81° 1′ E.). It is bounded on the north by the British District of Bāndā and the States of Ajaigarh and

Bhaisaunda; on the east by the States of Kothī, Nāgod, Sohāwal, and Ajaigarh; on the south by the Jubbulpore and Damoh Districts of the Central Provinces; and on the west by the States of Chhatarpur, Charkhārī, Bijāwar, and the Alīpura Jāgīr. The greater part of its area lies on the branch of the Vindhyas, known as the Pannā range, which traverses Bundelkhand from south-west to north-east. The only river of any importance is the KEN, which separates it from Chhatarpur. The geology of the State is unusually interesting, owing to the valuable mineral deposits which exist within its boundaries. The Pannā range consists principally of the upper Rewah sandstone of the Vindhyan series, and has long been famous for its diamond mines. The circumstances of the distribution of the diamonds are, however, very imperfectly understood. The mines are found scattered over an area of about 50 miles lying east and west of the town of Pannā, which is situated at the centre of the productive tract. The diamonds occur as pebbles in a conglomerate, and also in a pebbly clay derived from it by disintegration. The lower Rewah series is composed of three strata, the upper being the Jhīrī shales, the second lower Rewah sandstone, and the third a narrow shale band known as the Pannā shales. In the last of these the diamond-bearing conglomerate is intercalated at a variable horizon. The clay deposits are scattered in a capricious manner, often at great distances from any known outcrop of the conglomerate. The position of several of these beds, indeed, makes the theory that the gem-bearing gravel is a recent alluvium quite untenable. It is probable that the formation is an old one, and related to, if not identical with, the pebbly clays which have been met with at the base of the cretaceous Lameta rocks. Lameta outcrops occur near Pannā, and are overlaid by some of the easternmost remnants of the Deccan trap known to exist on the Vindhyan table-land. In the western parts near Bakswāho an interesting and varied sequence of geological formations is met with, in which the Deccan trap, cretaceous Lametas, Rewahs, Kaimurs, Lower Vindhyans, Bijāwars, and Bundelkhand gneiss are all typically represented[1].

A considerable area of the State is covered with forest, consisting largely of stunted teak and thick small tree and scrub jungle of species of *Grewia*, *Zizyphus*, *Carissa*, *Woodfordia*, *Flueggea*, *Phyllanthus*, *Capparis*, *Acacia*, *Anogeissus*, *Terminalia*, *Boswellia*, *Butea*, *Bassia*, *Diospyros*, and others.

The fauna are the same as those met with elsewhere in Central India, tiger, bear, *sāmbar* (*Cervus unicolor*), and wild hog being common. Small game of all kinds is plentiful. In former days

[1] E. Vredenburg, 'Geology of the State of Pannā,' in *Records, Geological Survey of India*, vol. xxxiii, pt. iv, p. 262.

elephants were caught in these forests in large numbers, and Abul Fazl, in detailing the places where these animals were captured, adds that the elephants from Pannā are the best. The climate is hot but healthy, and the annual rainfall averages 42 inches.

The Pannā chiefs are Bundelā Rājputs, descended from the ORCHHĀ house. After the revolt and subsequent death of Jhujhār Singh of Orchhā in 1635, the whole of Bundelkhand was plunged into anarchy. Taking advantage of this state of affairs, Champat Rai, a grandson of Udot Singh, the brother of Madhukar of Orchhā, commenced harassing the Mughals in every possible way, and finally established himself as the recognized leader of the Bundelā cause. For some time he was regarded with favour by Aurangzeb, to whom he had been of material assistance before the battle of Sāmogarh, in piloting his army across the fords of the Chambal river. Later he fell into disfavour and was attacked by the Mughal forces. To escape capture he was at his own request killed by his wife, who committed suicide immediately after.

His son Chhatarsāl, though only a youth, carried on his father's work, and acting more systematically rapidly acquired possession of the territory east of the Dhasān river, even extending his operations into the country round Gwalior and Eastern Mālwā. By 1671 he was virtually ruler of all Bundelkhand, his dominions extending from Bāndā in the north to Jubbulpore in the south, and from Rewah in the east to the Betwā river in the west. Orchhā and Datiā, however, were held by other chiefs of the same clan.

Chhatarsāl's first capital was KĀLINJAR, always the key to this region from the earliest days. After he had consolidated his power he moved, in 1675, to Pannā, which at various periods shared with CHHATARPUR (founded by him in 1707) and JAITPUR the honour of being his residence. The death of Aurangzeb gave him increased opportunities for strengthening his position, of which he took every advantage. In 1729 the emperor Muhammad Shāh sent Muhammad Khān Bangash into Bundelkhand to check his growing power, and Chhatarsāl was driven from Jaitpur. Reduced to extremities, he appealed for assistance to the Peshwā, Bājī Rao I, who at once responded, and Muhammad Bangash, after a siege of six months, was expelled by the allies from Jaitpur (1730). In 1731 Chhatarsāl divided his vast possessions. The largest share, valued at 39 lakhs annually, which included Pannā, fell to Hirde Sāh, his eldest son; the second, in Saugor District, valued at 32 lakhs, was granted to the Peshwā in return for his services; the third, including Jaitpur, and valued at 31 lakhs, went to his third son, Jagat Rāj, while numerous smaller grants were made to other vassals. Chhatarsāl died about 1732, at the age of eighty-nine, leaving twenty-two legitimate and thirty

illegitimate sons, whose descendants now hold PANNĀ, CHARKHĀRĪ, AJAIGARH, BIJĀWAR, SARĪLĀ, JASO, JIGNĪ, and LUGĀSI. The Mahārājā of Pannā is looked on as the senior representative of the Bundelā chiefs east of the Dhasān, who were known as the Dangāhī Bundelā chiefs, from their turbulent disposition (*danga*). Hirde Sāh (1732-9) on succeeding made Pannā his capital, and the State may be said to reckon its existence as a separate chiefship from this date. He was succeeded by Sabhā Singh (1739-52), in whose time the famous diamond mines were first worked. The next ruler, Amān Singh (1752-8), was murdered by his brother Hindupat (1758-77). Hindupat passed over his eldest son in favour of a younger, Anirudh (1777-9). Anirudh being a minor, the State was left in charge of Benī Hazūrī and a Brāhman, Khemrāj Chaube. The jealousies of these two plunged the State into a civil war, which was intensified by the death of Anirudh and the rivalry of numerous claimants. During this period the area of Pannā was much reduced, as Benī Hazūrī, Khemrāj, and one Sone Sāh Ponwār carved out States for themselves, founding respectively MAIHAR, PĀLDEO, and CHHATARPUR. Ultimately Dhokal Singh (1785-98), brother of Anirudh, was able to establish himself on the *gaddi*. Owing to these internal dissensions, Bundelkhand in 1789 became an easy prey to the Gosain leader, Himmat Bahādur, and his confederate Alī Bahādur (afterwards known as the Nawāb of Bāndā), who was the son of Shamsher Bahādur, an illegitimate son of the Peshwā. Alī Bahādur assumed suzerainty over Bundelkhand and proceeded to grant *sanads* to all the local chiefs, including Dhokal Singh. When the British supremacy was established, Kishor Singh (1798-1840) was nominally ruling, though actually an exile. He was reinstated and confirmed in his possessions by *sanads* granted in 1807 and 1811. He was succeeded by Harbans Rai (1840-9) and Nripat Singh (1849-70). During the Mutiny the Rājā assisted the British in holding the fort of Kālinjar and clearing Damoh District of rebels. For these good services he was rewarded with a *khilat* of Rs. 20,000 and the Simaria *pargana*; and in 1869 he received the grant of the personal title of Mahendra, which was made hereditary in 1875. In 1862 a *sanad* of adoption was conferred upon him, and in 1863 he ceded the land required for the East Indian Railway. He was succeeded by Rudra Pratāp Singh (1870-93), who was made a K.C.S.I. in 1876, and received an addition of two guns to his salute as a personal honour in 1877. This chief was succeeded by his brother Lokpāl Singh (1893-7), who was followed by Mādho Singh. The latter was deposed in 1902, for complicity in the murder of his uncle, Rao Rājā Khumān Singh. The present chief, Mahārājā Jādvendra Singh, son of Rao Rājā Khumān Singh, was born in 1893 and is now being educated at the Mayo College at Ajmer. The ruler of the

State bears the titles of His Highness and Mahārājā Mahendra, and receives a salute of 11 guns.

The population of the State has been: (1881) 227,306, (1891) 239,333, and (1901) 192,986, showing a density of 77 persons per square mile. During the last decade there has been a decrease of 19 per cent., mainly owing to famine. Hindus number 173,735, or 90 per cent.; Animists, 12,249, or 6 per cent.; and Musalmāns, 5,021.

The State contains one town, PANNĀ (population, 11,346), the capital; and 1,008 villages. The prevailing castes are Brāhmans, 22,700, or 12 per cent.; Chamārs, 19,600, or 11 per cent.; Lodhīs, 15,600, or 8 per cent.; and Ahīrs and Kurmīs, 12,600, or 7 per cent. each. About 38 per cent. of the population are supported by agriculture and 27 per cent. by general labour.

Of the total area, 466 square miles, or 19 per cent., are under cultivation, of which 26 square miles are irrigable; 246 square miles of the uncultivated area, or 10 per cent. of the total, are cultivable, the remainder being forest and uncultivable waste. Of the cropped area, wheat occupies 66 square miles, or 13 per cent.; oilseeds, 59 square miles, or 12 per cent.; rice, 46 square miles, or 9 per cent.; and *jowār*, 6 square miles. Irrigation is very little practised, tanks being the ordinary source of supply where possible.

The area covered by forest is very large. Till the State was taken under administration no attempt had been made to obtain full value from the timber, only certain trees, such as teak, *shīsham* (*Dalbergia Sissoo*), *harra* (*Terminalia Chebula*), *mahūa* (*Bassia latifolia*), and *achār* (*Buchanania latifolia*), being preserved.

The Pannā diamond mines[1] have been known since the seventeenth century. It is possible that they may have been worked in much earlier days, but had fallen into disuse. A systematic excavation for stones, however, was commenced in the time of Rājā Sabhā Singh, due, it is said, to the advice of the preacher Prān Nāth. The diamonds occur in the Rewah conglomerate and in alluvial beds. In the former case they are dug out of pits varying in depth from 3 to 30 feet. No large diamonds have ever been taken from the mine, though Hamilton (1813) mentions that a stone supposed to be worth Rs. 50,000 was in the possession of the Rājā. The stones are often of great purity. Pogson, who attempted to work a mine, arranges them in four classes, according as they are clear, orange-coloured, blackish, or greenish. In 1750 the State is said to have received 4 lakhs a year from this source, but the income has now diminished, the deposit having apparently been exhausted. The present income is about Rs. 7,000.

[1] *Records, Geological Survey of India*, 1906, vol. xxxiii, pt. iv, p. 263.

The actual miners are mainly Gonds and Kols, but the work is financed by merchants from Gujarāt.

The chief articles of commerce are grain and timber, which are exported through the railway at Satnā, or by road to Bāndā, Nowgong, Mahobā, and Cawnpore. The State is traversed by the Nowgong-Satnā metalled road, from which a branch road goes to Ajaigarh, 20 miles from Pannā; and by the Chhatarpur-Saugor road, which crosses the Bakswāho *pargana*. A British post office is maintained at Pannā town.

For administrative purposes, Pannā is divided into eleven *parganas*, with head-quarters at Aktohān, Bakswāho, Bīrsinghpur, Dharampura, Ghaura, Pannā, Pawai, Raipura, Shāhnagar, Simaria, and Singhpur. The chief being a minor, the State is under superintendence. When exercising powers, the chief ordinarily has full control of the civil judicial and general administration, while in criminal cases he exercises the usual powers granted to holders of senior *sanad* States in Bundelkhand.

The total revenue amounts to 5 lakhs, of which 3 lakhs, or 60 per cent., is derived from land, the remaining sources being insignificant. The chief heads of expenditure are general administration and collection of revenue (1·5 lakhs), and chief's establishment (Rs. 33,000). The incidence of the land revenue demand is Rs. 1–7 per acre of cultivated land and 4 annas per acre of total area. A regular survey is now being carried out. Up to the present, assessments have been made on the standing crop. The currency is now the British rupee.

The army consists of 30 cavalry, 150 infantry, and 12 gunners with 19 serviceable guns. The regular police force numbers 126 men and the rural police 447 *chaukīdārs*. A jail is maintained at Pannā town.

Education was first taken in hand by Mahārājā Nripat Singh in 1867. There are now 35 schools with 583 pupils. At the Census of 1901, 1·4 per cent. of the population were returned as able to read and write. A hospital was opened at Pannā town in 1881; and four dispensaries—at Pawai, Malhra, Muhdāra, and Bīrsinghpur—are under the supervision of the Agency Surgeon. In 1902–3 the number of persons successfully vaccinated was 3,215, or 16 per 1,000 of the population.

Pannā Town.—Capital of the State of the same name in Central India, situated in 24° 43′ N. and 80° 12′ E., on the high road from Nowgong to Satnā. Population (1901), 11,346. It was originally a Gond settlement, but fell in the thirteenth or fourteenth century to the Baghelas of Rewah. In 1494 it was attacked by Sikandar Lodī in his expedition against Rājā Bhaira or Bhīra. In 1563 it was held

by Rājā Rām Chandra Deo. It was seized in the seventeenth century by Chhatarsāl, who raised it to a position of importance by making it his capital in 1675. The town lies in a valley about 800 feet above the level of the sea, and 300 feet below the surrounding hills. The buildings are for the most part constructed of local stone, which gives it an appearance of cleanliness and substantiality. The most imposing building is the new palace. Several temples stand in the town, but none is more than 200 years old. The most pretentious is one dedicated to Krishna's brother Balrām, and known as Srī Baldeoji's, which was designed and built for Mahārājā Rudra Pratāp Singh by his State engineer, Mr. Manley, the design being based on that of St. Paul's Cathedral. The most interesting shrine is that of Prān Nāth, built in 1795. The exact date of Prān Nāth's arrival in Pannā is uncertain; but from the best accounts he appears to have come in 1742, during the time of Rājā Sabhā Singh, and not, as popular tradition has it, under Chhatarsāl. He was instrumental in discovering or reopening the diamond-bearing tract, and rose to high favour. Prān Nāth was a Kshattriya deeply versed in Muhammadan learning, and endeavoured to show that there was no essential difference between the Hindu and Muhammadan faiths. To this end he collected a number of passages from the Korān and the Vedas in a work called the Mahitariyal. His disciples prove their acceptance of his teaching by eating in a mixed assembly of Musalmāns and Hindus. However, with this exception, it does not appear that the two classes confound their civil or even religious distinctions, the unity, beyond that of eating, being no more than the admission that the God of both and of all religions is one and the same. The chief object of worship in the temple at Pannā is Prān Nāth's book, which is kept on a gold-embroidered cloth. His followers are called Dhāmās or Prān Nāthīs, and are said to be numerous in Nepāl, where converts have been made by missionaries of this sect. Nepālī Dhāmīs come to Pannā to study the doctrines of the founder of their faith, and there are always a certain number in the town.

Pannā is connected by a metalled road with Chhatarpur (42 miles), Nowgong (57 miles), and Satnā (44 miles). Most of the traffic in piece-goods and European articles is carried on through Satnā, which is served by the East Indian Railway.

Panruti (*Panroti*).—Town in the Cuddalore *tāluk* of South Arcot District, Madras, situated in 11° 46′ N. and 79° 33′ E., on the northern bank of the Gadilam river, and on the trunk road from Cuddalore to Salem, and also on the South Indian Railway. The population in 1901 was 15,206; but it has experienced great fluctuations owing to variations in the ground-nut trade, for which it is one of the chief centres. It is a Union under the Local Boards Act (V of 1884). It is one of the chief trading centres in the District, grain and ground-

nuts from Tirukkoyilūr, Kallakurchi, and even the eastern part of Salem District being carted to it by road; and many native merchants, besides an English firm, have branches of their business here. Brick-making is carried on to a large extent, as the clay of the place is especially suitable. The town is famous for what are known as Panruti toys. These are made of clay, and represent vegetables and fruits of various kinds as well as figures of gods and men.

Pantanaw Township.—Township in Ma-ubin District, Lower Burma, lying between 16° 45′ and 17° 14′ N. and 95° 15′ and 95° 38′ E., with an area of 483 square miles. It is cut up by a network of small streams, connected with the Irrawaddy, which are leased as fisheries. The population was 48,204 in 1891, and 62,374 in 1901. Karens form between one-third and one-half of the total. It contains one town, PANTANAW (population, 5,010), the head-quarters; and 92 villages. In 1903–4 the area cultivated was 125 square miles, paying Rs. 1,70,000 land revenue.

Pantanaw Town.—Head-quarters of the township of the same name in Ma-ubin District, Lower Burma, situated in 16° 59′ N. and 95° 31′ E., on the banks of the Pantanaw river, one of the deltaic branches of the Irrawaddy. Population (1901), 5,010. The town has long been a flourishing centre of the trade in fish and *ngapi*, but, owing to the silting up of the channel on which it stands, its prosperity now seems to be on the wane. The affairs of Pantanaw were at one time managed by a town committee, but in 1897 the town fund was abolished. There is a hospital with 10 beds.

Panth-Piploda.—*Thakurāt* in the MĀLWĀ AGENCY, Central India.

Pāntlāvdi Akbar Khān.—Petty State in REWĀ KĀNTHA, Bombay.

Pāntlāvdi Kesar Khān.—Petty State in REWĀ KĀNTHA, Bombay.

Panvel Tāluka.—Northern *tāluka* of Kolāba District, Bombay, lying between 18° 49′ and 19° 7′ N. and 72° 54′ and 73° 17′ E., with an area of 272 square miles. There are two towns, PANVEL (population, 10,152), the head-quarters, and URAN (12,237); and 226 villages. The population in 1901 was 112,515, compared with 107,855 in 1891, the increase being due to immigration and a higher birth-rate. Panvel is one of the most thickly populated *tālukas* in the District, with a density of 414 persons per square mile. The demand for land revenue in 1903–4 was 2·81 lakhs, and for cesses Rs. 22,000. Panvel includes the petty division (*petha*) of Uran; along its eastern boundary stand the lofty Bāwa Malang, Mātherān, and Prabal ranges, while the Mānikgarh range bounds the south-east. It is traversed from north to south by the Karnāla range, which is almost denuded of forest, while on either side of the Uran creek lie extensive salt rice lands reclaimed from the sea. Numerous navigable streams and creeks, of which the Kālundri river is the most noteworthy, intersect the low-lying seaboard

and afford easy water traffic. The climate, though damp and unhealthy for Europeans, is temperate, except in the hot season, at which time the water-supply gets scanty. The annual rainfall averages 120 inches.

Panvel Town.—Head-quarters of the *tāluka* of the same name in Kolāba District, Bombay, situated in 18° 59′ N. and 73° 7′ E., on the high road from Bombay to Poona. Population (1901), 10,152. The town was constituted a municipality in 1856, and had an average income during the decade ending 1901 of Rs. 23,400. In 1903–4 the income was Rs. 23,700. Panvel is the chief of four ports constituting the Panvel customs division. In 1903–4 the trade of Panvel port was: imports 7·23 lakhs, and exports 15·15 lakhs. The sea trade of Panvel is entirely coasting. The chief imports are grain, fish, liquor, gunny-bags, *mahuā* flowers, coco-nuts, and timber. The chief exports are grain, *ghī*, firewood, cart-wheel and axle oil, and oilseeds. The chief local industry is the construction of cart-wheels, of which it is said that every cart from the Deccan carries away a pair. Brick-making on a large scale has been attempted, but the enterprise has on two occasions failed. Panvel port is mentioned as carrying on trade with Europe in 1570; and it probably rose to importance along with Bombay, as it is on the direct Bombay-Deccan route. The town contains a dispensary, a middle school, and four other schools.

Pāpanāsam (*pāpa*, 'sin,' and *nāsam*, 'destruction').—Place of pilgrimage in the Ambāsamudram *tāluk* of Tinnevelly District, Madras, situated in 8° 43′ N. and 77° 22′ E., 6 miles from Ambāsamudram town, at the foot of the Western Ghāts, near the point where the Tāmbraparni river descends to the plain in a magnificent fall. This waterfall is regarded as very sacred and is annually visited by thousands of pilgrims. Pāpanāsam contains a large Saivite temple, and four or five *chattrams* and resthouses. The fish in the river near the temple are supplied with food from the temple funds. A mile below the village is situated the cotton-spinning factory of the Tinnevelly Mills Company, which is worked by water-power, generated by means of a channel from the river, and affords employment to 530 hands. The company has a capital of 4 lakhs, and turns out annually about 2,500,000 lb. of yarn, valued at 9 lakhs.

Papikonda.—Hill in Godāvari District, Madras. *See* BISON HILL.

Papun Township.—Township of Salween District, Lower Burma, conterminous with the District itself. Its head-quarters are at PAPUN VILLAGE.

Papun Village.—Head-quarters of Salween District, Lower Burma, situated in 18° 3′ N. and 97° 28′ E., about the centre of the District, on the left or east bank of the Yunzalin river, 73 miles from the confluence of that river with the Salween. It is confined between two ranges of hills and has the reputation of being extremely unhealthy.

It is little more than a village, its population being 735 in 1877, and 1,422 in 1901. About 40 per cent. of the population are Shans, other nationalities, Karens, Burmans, and natives of India, making up the remainder in approximately equal proportions. Papun is the starting-point and terminus of caravan routes to and from eastern Karenni and the north-western portion of Siam, and contains a courthouse, a hospital, and two schools.

Pārachinār.—Head-quarters of the Kurram Agency, North-West Frontier Province, situated in 33° 52′ N. and 70° 4′ E., 117 miles west of Kohāt and 16 from the Peiwar Kotal, 3 miles from the southern slopes of the Safed Koh, in a plain naturally fertile but hitherto uncultivated owing to the absence of irrigation. Population (1901), 2,847. Pārachinār possesses a temperate climate in which English flowers and fruit trees grow well. The station was first occupied in 1893, and is now the head-quarters of the Kurram militia and the residence of the Political Agent, Kurram. It contains a school, hospitals, and a jail, but has no trade.

Paramagudi Tahsīl.—*Zamīndāri tahsīl* in the Rāmnād subdivision and estate, Madura District, Madras. The population in 1901 was 142,665, compared with 131,151 in 1891. It contains one town, PARAMAGUDI (population, 16,134), a station on the Madura-Pāmban Railway and the head-quarters of the deputy-*tahsīldār*; and 375 villages. The Vaigai river passes through the *tahsīl* and serves as the main source of irrigation.

Paramagudi Town. — Head-quarters of the *tahsīl* of the same name in the Rāmnād estate, Madura District, Madras, situated in 9° 32′ N. and 78° 36′ E., on the south bank of the Vaigai river, on the road from Rāmnād to Madura, and one of the more important stations on the railway between these two places. The population in 1901 was 16,134, and is rapidly growing. It is the head-quarters of a deputy-*tahsīldār* and of a District Munsif. The chief industry is the weaving of silk cloths. Hand-painted chintzes used to be made formerly, but the industry is now dead.

Paramukh.—Village in Malabar District, Madras. *See* FEROKH.

Parāntīj Tāluka.—*Tāluka* of Ahmadābād District, Bombay, including the *petha* (petty subdivision) of Modāsa, situated in the extreme north-east of the District, and completely surrounded by Native States. It lies between 23° 3′ and 23° 36′ N. and 72° 44′ and 73° 27′ E., with an area of 447 square miles, and contains one town, PARĀNTĪJ (population, 8,175), its head-quarters, and 120 villages in the *tāluka* proper, and one town, MODĀSA (7,276), and 46 villages in the petty subdivision. The population in 1901 was 86,753, compared with 116,140 in 1891, the decrease being due to famine. The density, 194 persons per square mile, is slightly below the District average.

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Land revenue and cesses in 1903–4 amounted to 1·4 lakhs. From the north-east, lines of rocky bare hills gradually sink west and south into a plain, at first thinly wooded and poorly tilled, then with deeper soil, finer trees, and better tillage, till in the extreme west along the banks of the Sābarmatī the surface is broken by ravines and ridges. In the east the staple crop is maize, and in the west millet. Garden cultivation is neglected. Water is abundant. The *tāluka* is the healthiest and coolest part of the District. The rainfall is more certain than elsewhere, but the residents are extremely poor.

Parāntīj Town (*Parāntej*).—Head-quarters of the *tāluka* of the same name in Ahmadābād District, Bombay, with a station on the Ahmadābād-Parāntīj Railway, situated in 23° 26′ N. and 72° 51′ E., 33 miles north-east of Ahmadābād city. Population (1901), 8,175. Parāntīj is a prosperous town, and has been a municipality since 1855. The income during the decade ending 1901 averaged Rs. 7,000, and in 1903–4 amounted to Rs. 7,700. The chief exports are *ghī*, grain, and leather. Formerly there was a considerable local soap industry, but this has now greatly decreased. The town contains 6 schools, 5 for boys and one for girls, attended by 644 male and 109 female pupils. These include an English middle school with 19 pupils, and a mission orphanage with an industrial class attached to it. There is also a dispensary.

Parasgad.—South-easternmost *tāluka* of Belgaum District, Bombay, lying between 15° 36′ and 16° 9′ N. and 74° 49′ and 75° 19′ E., with an area (including the Murgod *mahāl* or petty subdivision) of 640 square miles. It contains one town, SAUNDATTI (population, 9,525), the head-quarters; and 124 villages, including MANOLI (5,308) and MURGOD (5,655). The population in 1901 was 108,311, compared with 110,584 in 1891. The density, 169 persons per square mile, is below the average for the District. The demand for land revenue in 1903–4 was 2·37 lakhs, and for cesses Rs. 19,000. A low range of sandstone hills running north-west and south-east divides Parasgad into two nearly equal parts. South-west of the hills, whose southern face is steep and rugged, lies a plain of fine black soil with many rich villages and hamlets, which suffered severely in the famine of 1876–7. The north-east, which is broken by low hills, is a high waving plateau overgrown with bush and prickly pear, the soil being mostly poor and sandy. In the extreme north, the sandstone gives place to trap, and the soil is generally shallow and poor. The Malprabha, which flows north-east through the middle of the *tāluka*, forms with its feeders the chief water-supply. Before the close of the hot season almost all the small streams dry up and stagnate, and the well and pond water becomes unwholesome. In the north and east the rainfall is scanty and uncertain; but in the south and west, and in the immediate

neighbourhood of the Western Ghats, it is plentiful. The annual fall at the *tāluka* head-quarters averages 23 inches.

Parasnāth.—Hill and place of Jain pilgrimage in the east of the Gīrīdīh subdivision of Hazāribāgh District, Bengal, and adjoining Mānbhūm, situated in 23° 58′ N. and 86° 8′ E. The mountain consists of a central narrow ridge, with rocky peaks, rising abruptly to 4,480 feet above sea-level from the plains on the south-west, and throwing out long spurs which extend towards the Barākar river on the north. A spur to the south-east forms the boundary between Hazāribāgh and Mānbhūm, and eventually subsides into an extended belt of high land with peaked hills in the latter District. The hill is now easily approached by the East Indian Railway to Gīrīdīh station, and thence by a short journey of about 18 miles along a metalled road. In 1858 Parasnāth was selected as a convalescent dépôt for European troops; but on account of the confined area of the plateau at the summit and the solitude, it was found unsuitable for the purpose and was abandoned in 1868. The building formerly used as the officers' quarters is now utilized as a *dāk*-bungalow. Pilgrims to the number of 10,000 flock annually from distant parts of India to this remote spot—the scene of Nirvāna or 'beatific annihilation' of no less than ten of the twenty-four deified saints who are the objects of Jain adoration. From the last of these, Pārsva or Pārsvanātha, the hill, originally called Samet Sikhar, has taken its better known name. Pilgrimage to Parasnāth is still as popular as ever among the Jains; and new shrines, a single one of which in white marble cost Rs. 80,000, are from time to time erected. The temples lie well apart from the plateau, and the improved means of communication hold out a possibility of the latter being again utilized as a small sanitarium.

[Sir W. W. Hunter, *Statistical Account of Bengal*, vol. xvi, pp. 216, 217.]

Paratwāda.—Civil station of Ellichpur town, Amraotī District, Berār, from which it is distant 2 miles. The population in 1901, when the town was garrisoned by a regiment of native infantry and a battery of the late Hyderābād Contingent artillery, was 10,410; but the troops were removed in 1905. The town is situated on the Sāpan and Bichan rivers. The municipality was created in 1894. The receipts and expenditure from that year till 1901 averaged Rs. 12,000. In 1903–4 the income was Rs. 16,437, chiefly derived from taxes and cesses; and the expenditure was Rs. 17,725, chiefly on conservancy and public works.

Paravūr.—Town in Travancore State, Madras. *See* PARŪR.

Pārbati.—A tributary of the Chambal, draining part of Central India and Rājputāna. Rising in the Vindhyas, in 22° 52′ N. and 76° 39′ E., at the village of Makgardha, it flows in a northerly direction

either through or along the borders of the States of Bhopāl, Gwalior, Narsinghgarh, and Rājgarh in Central India, and Tonk and Kotah in Rājputāna. After a course of 220 miles it joins the Chambal at Pāli *ghāt* in the north-east corner of Kotah (25° 51′ N. and 76° 37′ E.). Below Narsinghgarh the Pārbati is a river of considerable size, the bed in parts of its course being nearly two miles broad. For about eight months the stream is continuous, the volume being very great during the rains; but for the rest of the year, except in deep reaches and pools, the bed is dry. The falls at Gugor are extremely picturesque when the river is in flood. The Sīp, Sarāri, and Parang from the east, and the Andherī from the west, are the only tributaries of importance. Two railways, the Bhopāl-Ujjain and the Gūna-Bīna-Bāran, cross the Pārbati. At Atru, in Kotah State, near the confluence of the Andherī, a dam has been constructed, and the water thus stored ordinarily supplies about 7,000 acres in Kotah.

Parbhani District.—District in the Aurangābād Division of Hyderābād State, lying between 18° 58′ and 20° 2′ N. and 76° 4′ and 77° 42′ E., with an area of 5,091 square miles, including 995 square miles of *jāgīr* and *paigāh* lands. It is bounded on the north by the Buldāna and Bāsim Districts of Berār; on the east and south by Nānder; on the south-west by Bhīr; and on the west by Aurangābād. A small area was transferred to the District from Nānder in 1905.

Physical aspects.

The chief hill ranges are the Sahyādriparvat and the Bālāghāt; the former runs through the north of the District, and the latter traverses a portion of the Pālam *tāluk* in the south. The *tāluks* of Jintūr, Hingoli, and Kalamnūri are partly situated on the plateau south of the Sahyādri range, while the other *tāluks* lie in the plains. The plateau slopes towards the south, and terminates in the valley of the Dudna.

The most important rivers are the Godāvari, the Pengangā, the Pūrna, and the Dudna. The Godāvari enters from the west, and, after traversing the southern *tāluks* for 112 miles, passes into Nānder District. The Pengangā flows along the northern border of the District, separating it from the Bāsim District of Berār. The Dudna flows across the District for about 50 miles from west to east, and joins the Pūrna. The latter river, which enters Parbhani from the south-west corner of Berār, flows first in a south-easterly direction for about 35 miles, and then due south and falls into the Godāvari. Its length in this District is about 100 miles. A number of minor streams—the Kikia (13 miles), Kharki (13), Kastūra (38), Paingalgira (24), Indrāyani (13), Dhāmor (6), Ashna (12), Kiadho (48), and Kapra (12)—also water the District.

The geological formation is the Deccan trap. In the valley of the Godāvari and some of its tributaries, the trap is overlaid by gravels

and clay beds of upper pliocene or pleistocene age, containing fossil bones of extinct mammalia.

The trees found in the forest areas consist of *babūl* (*Acacia arabica*), *khair* (*Acacia Catechu*), *nīm*, mango, tamarind, *eppa* (*Hardwickia binata*), and *mahuā* (*Bassia latifolia*).

In the jungles of the Jintūr, Hingoli, and Kalamnūri *tāluks*, tigers, leopards, wolves, hyenas, bears, and wild hog are found, while in all the *tāluks sāmbar* and spotted deer are not uncommon. Partridge, quail, and peafowl are also to be found.

The climate is dry and healthy from February to the end of May, but feverish during the monsoon and part of the cold season. The plateau is much healthier than the plains, not being so damp during the rainy season. The temperature ranges from 60° in December to 105° in May in the plains, and to 98° on the plateau.

The rainfall during the twenty-one years ending 1901 averaged 34 inches. The amount received in 1899 (12 inches) was abnormally small, and resulted in the famine of 1900.

History.

The District, which formed part of the Yādava kingdom of Deogiri (the modern Daulatābād), was conquered by Alā-ud-dīn Khiljī in the beginning of the fourteenth century, and has since remained under Muhammadan rule. After the death of Muhammad bin Tughlak in 1351, it fell successively to the Bahmani and Nizām Shāhi kingdoms. On the conquest of the Deccan by Akbar and his successor it was again united to Delhi, but was finally separated in the beginning of the eighteenth century, on the foundation of the Hyderābād State.

The District contains four structures of note. The temple of Nāgnāth at Aundah in the Kalamnūri *tāluk* is said to have been a seven-storeyed building which was demolished by Aurangzeb. At present it is 100 feet long, 80 feet broad, and 60 feet high, with a quadrangular court 7,200 square feet in area. It is adorned with hundreds of exquisitely carved figures of men, horses, elephants, bulls, and monkeys, and is locally believed to have been built by a Pāndava Rājā at a fabulous cost. The Jain temple of Pārasnāth near Jintūr has a very narrow, dark passage leading to a domed building, in the centre of which is a carved figure 12 feet high. A plainly built temple near Bāmu in the Jintūr *tāluk* stands at the junction of the Saraswatī and Pūrna rivers. The shrine of Ramazān Shāh, situated on the summit of a hill near Khari in the Hingoli *tāluk*, is enclosed by a strong wall 30 feet high and 1,200 feet square. The saint is said to have been converted to Islām, and his shrine is visited by both Hindus and Musalmāns. Besides these, a large number of Hemādpanti temples are found throughout the District.

The number of towns and villages, including those in *jāgīrs*, is 1,502.

The population at the last three enumerations was: (1881) 685,099, (1891) 805,335, and (1901), 645,765. The famine of 1900 is responsible for the enormous decrease in the last decade.

Population.

The District is divided into seven *tāluks*, PARBHANI, PĀTHRI, JINTŪR, HINGOLI, KALAMNŪRI, BASMAT, and PĀLAM (a 'crown' *tāluk*), besides the two large *jāgīr tāluks* of Partūr and Gangākher. The towns are HINGOLI, PARBHANI, BASMAT, MĀNWAT, PĀTHRI, SONEPET, and GANGĀKHER. About 90 per cent. of the population are Hindus, and 88 per cent. speak Marāthī. The following table shows the distribution of population in 1901:—

Tāluk.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Parbhani . .	518	1	165	93,325	180	− 1	Not available.
Jintūr . .	798	..	260	77,906	97	− 29·0	
Hingoli . .	633	1	190	78,138	123	− 21·4	
Kalamnūri .	492	...	175	52,437	106	− 30·5	
Basmat . .	523	1	194	66,272	126	− 32·2	
Pālam . .	427	...	121	65,490	153	− 12·2	
Pāthri . .	705	2	151	109,837	155	− 1·8	
Jāgīrs, &c. .	995	2	239	102,360	103	− 23·1	
District total	5,091	7	1,495	645,765	125	− 19·8	16,147

In 1905 the northern villages of the Nānder *tāluk*, Nander District, were added to Kalamnūri, and a few villages in Pāthri were transferred in exchange for some in the Ambarh *tāluk* of Aurangābād District.

The most numerous caste is that of the cultivating Kunbīs, who number 260,800, or more than 40 per cent. of the total population. Mahārs or village menials number 67,400, Dhangars or shepherds 47,900, Baniās or trading castes 33,700, Māngs or leather-workers 24,000, and Brāhmans 20,500. The Mahārs and Māngs also work as agricultural labourers. Persons supported by agriculture number 342,000, or 53 per cent. of the total.

There is no Christian mission in the District, but the number of native Christians returned in 1901 was 70.

The soils of the *tāluks* of Parbhani, Pāthri, Basmat, and Pālam are mostly composed of the fertile *regar* or black cotton soil, with some *masab*; but in the remaining *tāluks masab* and *kharab* soils predominate. *Rabi* crops, such as white *jowār*, wheat, gram, *tuar*, *lākh*, and peas, are extensively grown on the *regar* and *masab*; and yellow *jowār*, *bājra*, cotton, indigo, sesamum, *sāvān*, and oilseeds and pulses are raised on the *kharab* and

Agriculture.

masab soils during the rains. The *kharab* soils also bear garden crops, but they require heavy manuring. The soils at the foot of the hills and in the valleys of rivers are very fertile, and produce *rabi* and garden crops.

The tenure of lands throughout the District is *ryotwāri*. Out of 4,096 square miles of *khālsa* and *sarf-i-khās* lands, 3,547 square miles were cultivated in 1901, 54 were cultivable waste and fallows, 255 were forest, and 240 were not available for cultivation. The staple food-crop is *jowār*, grown on 1,797 square miles, or 50 per cent. of the area cropped. Next in importance are wheat (229 square miles), *bājra* (206), and rice (57). Cotton is grown throughout the District, covering 809 square miles, or about 23 per cent. of the net area cropped. Sugar-cane occupies only 3 square miles.

No special breed of cattle is characteristic of the District, but those found are hardy and strong, and well suited for ploughing the prevailing heavy soils. Sheep and goats of the ordinary kind are reared by the Dhangars and some well-to-do ryots. Ordinary Marāthā ponies fetch about Rs. 50, but animals of a better sort command as much as Rs. 100 or Rs. 150 each. The State maintains nine Arab stallions in six of the *tāluks*, for the purpose of improving the local breed, at an annual cost of Rs. 2,400.

The total irrigated area, which was 74 square miles in 1904, is supplied by wells numbering 10,471. There are no irrigation tanks, but 15 other sources supply water.

The area under forest is 255 square miles, of which 55 are 'reserved' and the remainder open. Jintūr, Kalamnūri, Hingoli, and Pālam are the only *tāluks* containing forest.

No minerals of economic value are found in the District. Black basalt and granite are available everywhere, and are used for buildings and road-metalling.

Trade and communications.

There is no important hand industry. Ordinary coarse cotton cloth is woven for local use. The District contains 13 ginning factories and 5 cotton-presses, employing 255 hands. The total quantity of cotton ginned in 1901 was 417 tons.

The principal exports consist of *jowār* and other food-grains, cotton, oilseeds, indigo, chillies, cattle and sheep, jaggery, tobacco, hides, bones and horns, *tarvar* bark for tanning, and *mahuā* flowers. The chief imports are salt, salted fish, opium, spices, gold, silver, copper and brass sheets and vessels, sulphur, refined sugar, kerosene oil, iron, raw and manufactured silk, cotton and woollen cloth.

The chief centres of trade are Mānwat, Hingoli, Parbhani, Sonepet, Gangākher, and Mantha, where a large business is done in local produce. Weekly bazars are also held at the *tāluk* head-quarters and

other villages. The trading and money-lending castes are the Vānīs, Komatis, Mārwāris, Kachchis, and Bhātias.

The Hyderābād-Godāvari Valley Railway traverses the District from east to west for a distance of 63 miles, and has 9 stations within its limits. The total length of roads is 341 miles, of which only 18 are metalled. About 26 miles were constructed during the famine of 1900. The principal roads are from Hingoli to Kāvergaon, metalled (18 miles), to Jaipur (28 miles), to Parbhani (44 miles), from Jintūr to Parbhani (24 miles), to Sailū (22 miles), from Basmat to Lāsina (12 miles), and from Parbhani to Gangākher (20 miles). Besides these, about 163 miles of fair-weather roads lead to the head-quarters of the *tāluks* and other important places.

Famine. The District suffered most severely during the famines of 1819 and 1854-5. It was again affected to a certain extent in 1876-8, but distress was most severe in 1899-1900. The rainfall in 1899 was less than 12 inches, and both the *kharīf* and *rabi* crops failed. The *kharīf* crop gave only 6 per cent., and the *rabi*, which mostly consists of *jowār*, the staple food of the people, was only about 4 per cent. of the normal. The number of units relieved exceeded 14 millions, and the highest attendance in one day was 90,222. While famine was raging in the District, cholera supervened, and carried off thousands, and the Census of 1901 revealed the enormous decrease of 159,570, or 20 per cent., compared with 1891. The people lost about 39 per cent. of their cattle, and the total cost of the famine to the State was more than 14 lakhs.

Administration. The District is divided into three subdivisions: one comprising the *tāluks* of Hingoli, Kalamnūri, and Basmat, under the Second Tālukdār; the second comprising the *tāluks* of Parbhani, Pāthri, and Jintūr, under the Third Tālukdār; and the third consisting of Pālam only, which is under the First Tālukdār, who exercises a general supervision over the work of all his subordinates. Each *tāluk* is under a *tahsīldār*.

The *Nāzim-i-Dīwāni* or Civil Judge presides over the District civil court, and there are two subordinate Munsifs' courts. The First Tālukdār is the chief magistrate of the District, and the District Civil Judge is a joint-magistrate, exercising powers in the absence of the First Tālukdār from head-quarters. The Second and Third Tālukdārs and the seven *tahsīldārs* have magisterial powers of the second and third class. The two Munsifs exercise third-class magisterial powers in the absence of the *tahsīldārs* from their head-quarters. Serious crime is rare in ordinary years; but in adverse seasons dacoities and cattle and grain thefts increase in proportion to the severity of the distress.

All that is known of the early revenue history of the District is that Malik Ambar's system was in force from the beginning of the

seventeenth century. His settlement, which was a modification of Todar Mal's method, was based upon the actual area and the productiveness of the soil. *Tāluks* and villages were subsequently farmed out by the State to revenue contractors, who were allowed 10 per cent. for collections. After the introduction of District administration in 1866, this system was abolished, and cash payments with a *ryotwāri* settlement were introduced. In 1885 the *tāluks* of Pāthri, Kalamnūri, and Hingoli, and in the following two years the remaining four *tāluks*, were settled for fifteen years, the rates fixed approximating to those in the adjoining Districts of Bāsim in Berār, Aurangābād, and Bhīr. The enhancement of revenue resulting from this assessment was Rs. 99,210, or $5\frac{1}{4}$ per cent. The average rate on 'dry' land is Rs. 1–5 (maximum Rs. 1–14, minimum Rs. 1–1), and on 'wet' land Rs. 3–4 (maximum Rs. 5–6, minimum Rs. 1–2).

The land revenue and the total revenue for a series of years are shown below, in thousands of rupees:—

	1881.	1891.	1901.	1903.
Land revenue .	14,64	17,78	20,67	19,84
Total revenue .	19,35	25,47	33,16	34,45

Owing to changes of area made in 1905, the land revenue demand is now about 22·1 lakhs.

Since 1888 a cess of one anna in the rupee on land revenue has been levied for local purposes, and local boards formed for every *tāluk* except Parbhani, under the chairmanship of the *tahsīldārs*. A District board was constituted at the head-quarters, with the First Tālukdār as president. Of the total cess, which yielded 1·3 lakhs in 1901, one-fourth is set apart for local and municipal works. At Parbhani town there is a municipality, and each of the *tāluk* head-quarters has a small conservancy establishment, the District and *tāluk* boards managing the municipalities as well. The local board expenditure in 1901 was Rs. 60,200.

The First Tālukdār is the head of the police administration, with a Superintendent of police (*Mohtamim*) as his executive deputy. He has under him 8 inspectors, 92 subordinate officers, 548 constables, and 25 mounted police, distributed in 30 police stations. There is a District jail at Parbhani, where short-term prisoners are kept, while those whose sentences exceed six months are sent to the Central jail at Aurangābād.

The District takes a medium position as regards the literacy of its population, of whom 2·5 per cent. (4·9 males and 0·1 females) could read and write in 1901. The total number of pupils under instruction in 1881, 1891, 1901, and 1903 was 267, 2,042, 3,341, and 3,437

respectively. In 1903 there were 56 primary and 3 midd' schools, with 41 girls under instruction. The total expenditure o education in 1901 was Rs. 20,300, of which the State contributed Rs. 11,300. About 44 per cent. of the total was devoted to primary schools. The fee receipts in 1901 amounted to Rs. 1,952.

In 1901 there were four dispensaries, with accommodation for 15 in-patients, besides a *Yūnāni* dispensary maintained from Local funds. The total number of cases treated at these was 33,432, of whom 121 were in-patients. The number of operations performed was 663, and the total expenditure amounted to Rs. 12,900. The number of successful cases of vaccination in 1901 was 1,695, or 2·62 per 1,000 of the population.

Parbhani Tāluk.—Central *tāluk* of Parbhani District, Hyderābād State, with an area of 560 square miles. Including *jāgīrs*, the po tion in 1901 was 94,774, compared with 107,136 in 1891, the decrease being d to the famine of 1900. The *tāluk* has one town, PARBHANI (popul n, 9,958), the head-quarters of the District and *tāluk*; and 175 villages, of which 10 are *jāgīr*. The land revenue in was 3· lakhs. The Godāvari river flows in the south of the *tāluk*. The soils are chiefly alluvial or *regar*.

Part ani Town.—Head-quarters of the District and *tāluk* of the same name, Hyderābād State, situated in 19° 16′ N. and 76° 47′ E. Population (1901), 9,958. Besides the District and *tāluk* offices, it contains the civil court, a Munsif's court, a British sub-post office and a State post office, a dispensary, the Police Superintendent's office, and four schools, of which one is a middle school. Parbhani is a station on the Hyderābād-Godāvari Valley Railway, and is a flourishing centre of the grain and cotton trade. There are three cotton-pressing and ginning factories.

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